

# **on the human condition**



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This book would not have been possible without the research executed over at least the last two decades. As such it bears more the character of a synopsis than an explanation. The downside is that a degree of foreknowledge of previous publications is recommendable.

There are two parts.

One has “two essays” of which the first demonstrates that the stance taken in relation to the Umwelt appears in each of the subsequent stages of development. The second ponders on the question what actually the stuff of thinking is. The stance or pattern mentioned joined with the stuff of thinking catches strikingly the dynamic making of the human a species quite different from all the other non-human animals. It embodies the human condition.

The second part of the book explains that most of the actual so-called abilities making the difference do not emerge from mysterious sources located somewhere inside but to a large degree are the result of actions taken in the open and in principle observable realm. “In principle” because some like endophasy require special developed equipment.

In short the first part of this publication unveils the specificity providing the critical difference while the second explains how seemingly mysterious effects are brought forth by the execution of on in principle observable operations.



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## Preliminary: premises taken

Not one single explanation appears out of the blue demonstrating points of view as if they were neutral and completely objective. Therefore it is appropriate to start with a brief overview of premises, assumptions, and points of view taken. That is not only a matter of being open but taking note will facilitate further understanding of the line of thought. It will be informative but actually all too brief as each merits a contribution.

Man is but one species amongst many. This insight expressed by Darwin is nowadays without reluctance accepted by the scientific community. Alas it is often only discussed within domains like biology, evolutionary biology in particular and evolutionary psychology.<sup>1</sup> Alas because an important fact seems to be overlooked. The similarity suggested by being a species amongst species, does not occur only on the level of biology but also in the way the environment is getting perceived and accordingly negotiated. In the endeavour trying to understand the development into a human species this should be taken to be the starting point.<sup>2</sup> Assuming that no mysterious interventions took place, the plausible question then is how did the hominine get from there to the condition of the contemporary human?

Whatever the cause of the change in morphology, it has to proof viability in real life situations in the public arena.

Any organism only exists in the locus where he is anchored by the body even if that organism in imagination seems to be elsewhere.

Embodiment and the accompanying dynamic determine the character and the range of the existence experienced. Even when experiencing a displacement in space and time in imagination, it cannot be performed anywhere else than in the location mentioned. Hence a displacement of that type is a construct.

Commonly cognition is getting understood from out the human perspective which actually is a mixture of an animal mode and what might be called a specialized exclusively human way. This top-down approach is at the same time the yardstick to judge the relevant behaviour of all other organisms. But the other way around, cognition actually comes down to heuristics, strategies and procedures in order to cope with the burdens imposed by the environment, in short: to survive. This is the fundamental drive giving content to what in cultural terms, to distinguish from biological ones, will be called cognition. The human mode, taken for granted and as yardstick, is actually a remarkable efficient and efficacious specialisation arisen under the pressure of ecological changes promoting a difference in posture,

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<sup>1</sup> The scientific pattern focuses on what is measurable, thus material and so biology is much more susceptible to description than cognitive processes.

<sup>2</sup> The condition of on that level has been discussed in The Forgotten Transition (2018) and further elaborated in the first chapters of The 5th Ape (e-book, available on the Internet Archive + J.F.R Gilbert Ph.D./browse Library. As this publication at this time is not finished versions might differ in the number of chapters.)

locomotion, use of hands, exploitation of skills already present etc. This bottom up perspective is the one preferred in this contribution.

The following is not a premise but has a methodological purpose. Concepts are not neutral labels and explanations. More than often they are crystallizations from historical circumstances. Particular historical based meanings deceive into false problems or veil the underlying operations or both.<sup>3</sup> The look on the operational dimension from a direct as possible point of view it is desirable to bracket the historical biased meaning.

In summary: Being a species amongst species all share the same basic conditions and orientation which is defined, at the same time constrained by the abilities of the body. It can only be executed on the locus of existence, which also is the case for the experience of a displacement in space and time.

Cognition refers to the whole of efforts to survive, the latter being the decisive factor.

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<sup>3</sup> The introduction of the concept of a mind distinct from the body seduces into probing the location of it. Question is obvious: what are the historical circumstances promoting the introduction of that concept? Is it referring to something tangible or is it nothing more than a construct? Research into the history of the concept can help.

## I. The human condition, two essays

### First essay: the core

Until recently I considered myself quite fortunate to be interested in two different fields of research, that of paleoanthropology in particular the sector concerned with the emergence of the type of knowledge characteristic for the human and on the other hand the peculiar developmental history of Western thought.

The interest for both domains is no coincidence. From an action theoretical point of view the focus is on the operations in a technical sense i.e. what has actor X to perform in order to bring forth 'condition' Y. But as a trained philosopher I was aware of the fact that the meanings of the concepts dominating the discourse were not non-committal. The said meanings originated against a background of particular historical circumstances. So in order to realize a clear view on the operations it was necessary to get an insight in the historical biased meaning allowing these to be put into brackets.<sup>4</sup> So apart of being really interested in the history of Western thought, the move taken in the actual context had a rather methodological motivation.

That was the situation until quite recently in a condition of half sleep I realized that actually in both domains the same basic scheme seemed to be present.

I will clarify this in three steps, the first two in relation to anthropogenesis and the last on the mentioned history of Western thought. It will be brief because I want to focus on the core of the idea and moreover I have in previous texts elaborated on each of the levels.<sup>5</sup>

The approach is that of an action theory i.e. it will focus firstly on operations executed in the open followed by attention for the effects of these operations. By this the **formal scheme** is quite simple

$$\text{Operation(s)} \longrightarrow \text{Effect(s)}$$

### First level

First, second and third refers not only to an ordering in time (phylogeny) but as well to the dimension of the development or construction. "First" in that sense provides the stepping stone being the necessary condition for the further development.<sup>6</sup>

The first level is about the adaptation of a stone implement in order to bring forth a tool with increased efficiency in the context of goal direct action. In the course of this process attention went to formal characteristics serving the goal set (improving the implement). In this a motor and perceptual selection

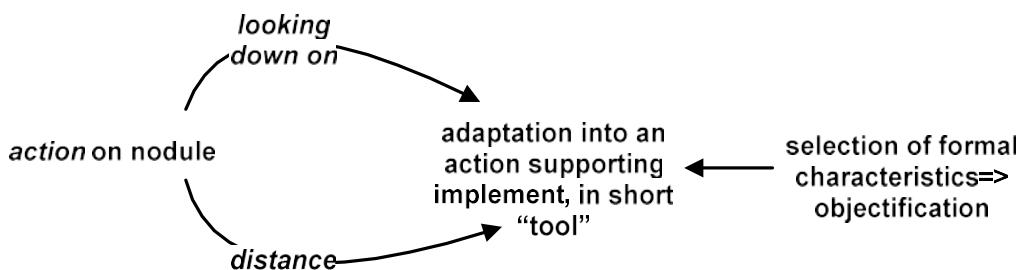
<sup>4</sup> The idea of "Einklammerung" suggested by Husserl in his book Ideas dating from 1913.

<sup>5</sup> The Forgotten Transition, The supplement; The lynchpin; Beyond MET; Script...

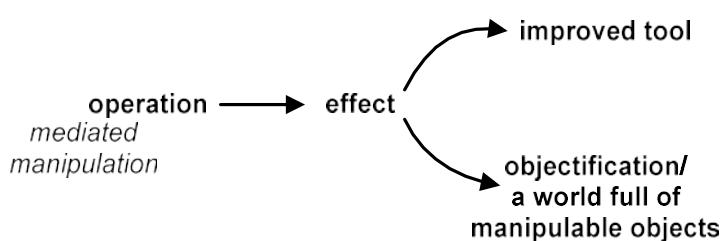
<sup>6</sup> To be stressed that further development is contingent, it happened but did not need to and, coincidental i.e. it happened by accident not by intent.

gradually took the form of a filter, developed into a stable motor and perceptive configuration. In contemporary language it could be said that in the approach an “object” got installed, an object at the same time in a concrete form (the tool at hand) and as a set of formal characteristics (mass, texture, volume, weight, handedness...). I have called this objectification but keeping in mind that this is not a natural thing, merely a motor and perceptive configuration.

Objectification is the first aspect in this development. The second dimension is that in that process not only formal characteristics got selected but as part of it a perspective of taking distance came in place. Judging the quality of the adaptation involves such a “move”. Not in the sense of “an intention provoked the taking if distance in order to...”<sup>7</sup> but a haptic exploration and experience based evaluation. The third aspect is that this taking distance does not take a straight view but in metaphorical terms a view from above, a stance of consideration. *There is something there in front of me and I look on it from above*. In short, there is a coming into being of the act of objectification taking place in a mode “a view from a distance looked upon from above”. This could be called “**an object focussing arc**”.



The product on the level of the tangible is an improved implement and on the level of perception a reorganization of the input into an object-configuration by this gradually transforming the interpretation of the environment into a scene composed by manipulable objects.



The last scheme is the substrate transforming a great ape into technical skilled one.

Comment in the margin: Mediated manipulation is complex in the sense that a) an action is applied onto what will become a means, b) a means is used in an action or, c) combination of both a and b. In fairness this difference has to be mentioned but for the actual context it is not immediately important.

<sup>7</sup> A teleological perspective as in Holloway's idea on the emergence of language “it had to come in place”.

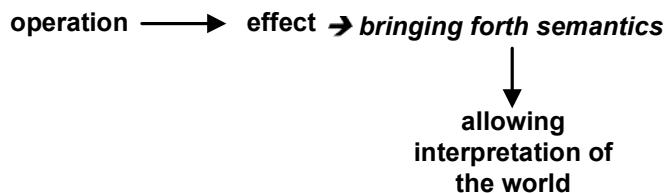
### ***Second level***

In this case the means used in an action is becoming associated with an incidental meaning in the experience creating a displacement in time and space.

While simple and occasional in the beginning it might develop into a complex array of scenes of this type by this creating storylines, ways of interpreting events in the environment.



Applied on the basic scheme



Bringing forth semantics is the effect in terms of technical realisation. Focussing on operations, these are the activities and on this level which are of interest.

This technical intervention allows to interpret events in the world which is the pragmatic effect i.e. the effect experienced. This is not a just so effect but the dimension initiating further exploration and use.

Easy to understand: once mastered speaking, the technical aspects of bringing it forth escapes us while it is the effect stimulating to continue this practice.

Of importance for this contribution is that the product of this level is semantics, irreflective the content i.e. the pure fact of producing meaningful content disregarded the content of it. The story itself is of no importance here.

Comment in the margin: Until recent this two levels constituted the subject to be studied. As said the attention for the history of Western thought was only instrumental. Until recent indeed it dawned on me that the same object focussing arc was present to on the level of the semantic, more specific in the way the semantic content got structured in what would become the Western culture from a certain moment in time.

### ***Third level***

So far the focus was on the organization on the level of technique i.e. what operation making use of what exactly brings forth effect Y? The conclusion on the previous level was: 1) it produced semantics, 2) allowing interpretation of the world.

The focus will now be redirected from semantics (displacements in space and time) as an effect or a product irrespective the content, the proper fact that a story has been produced, onto precisely the content, the theming present in the content.

The suggestion is that the “the object focussing arc” remains but the object will take a specific guise.

The previous stage concluded with the production of semantics, a storyline. All attention went to the product. Now the focus will be on the type of the content.

In the period preceding the turn which will be discussed later the story took the form of a myth. I prefer to call this an articulation of existence. The story only expresses an act (do this or that), an order to perform an act (moral and/or legal ruling), a condition (feeling sad or being poor), or some information (sold x cows...). In short the character of the story is that of an act amongst all other acts like taking a breath, walking, fighting, lighting a fire, making love...

This character is universal.<sup>8</sup>

Let's now focus on the turnaround.

It so happened that in the transition of the 6<sup>th</sup> to the 5<sup>th</sup> century in some regions around the Mediterranean the concept of the invariable got introduced soon followed by the question into the nature of the invariable.<sup>9</sup>

The attentive reader will have observed a remarkable shift. In the mythical period the story of the version itself was object of attention. It could have been an order “do X...”. In other words the expression as an expression is the object of interest. But from now on a semantic *part of* the expression – the reference to the invariable - becomes the centre of attention, becomes questioned.

This way of approaching is so engrained in us as Westerners that the objection spontaneously arises “that is the natural way thinking is getting structured!” On this I can only answer quite firm “it is not!” If there is something that might be called natural and that is even the wrong qualification, then it is the ability to produce storylines whatever the content. On how a storyline acquires its particular content is an altogether other subject which would divert to far off and is even of no relevance here. Relevant is the fact that the storyline changed in a particular way. The content acquired a particular structure.

It took the form of the object focussing arc with that novel specification that the object – earlier restricted to a set of formal characteristics, now took the form of a particular question “what is the nature of that what is?”

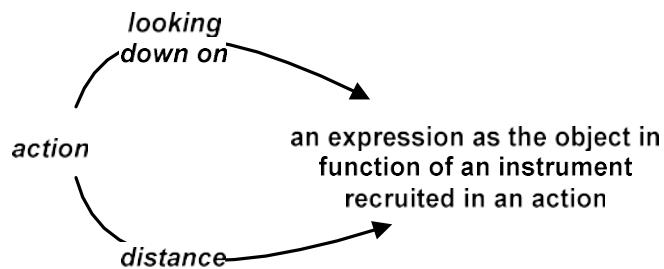
Recall the *object focussing arc*

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<sup>8</sup> On all too hasty objection could be “there has been science and contemplation in India, China etc also...”. Indeed, but they always have been performed in function of higher power (emperor, divine instance, lord, set of supreme values...). For an interesting discussion on the difference: Almond, P.C. 1988. *The British discovery of Buddhism*. Cambridge; also Quack, J. 2012. *Disenchanted India*. Oxford University Press; furthermore but in a broader approach Nisbett, R.E. 2003. *The geography of thought, how Asians and Westerners think differently... and why*. The Free Press.

<sup>9</sup> For an elaboration, reference made to other texts for instance “Realizing human cognition in the cross-section of life”; “Mind what are we talking about”, “The remarkable character of Western thinking”.

Further the invariable is also getting worded as “that what is” (Greek: hoti est) subsequently the question “what is that (the nature) of that what is?” (ti esti ti).

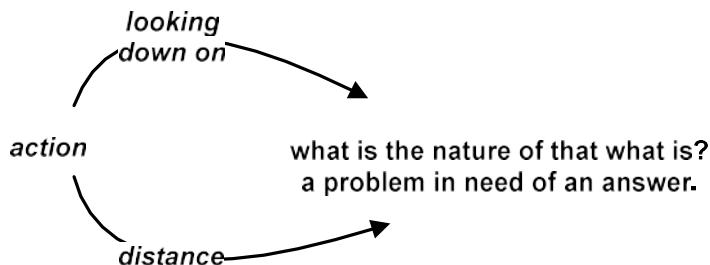


What remains? The structure or the stance of looking upon from a distance.

What changes? The role of an object is no longer the expression (as an instrument in a larger goal directed enterprise) but the object of attention is now: a semantic meaningful unit in particular “what is the nature of that what is?”

This pattern, a problem in need of an answer, is since that period the theme dominating the structure of thought based on the practice of the Greeks.<sup>10</sup> Take as an illustration the whole of the fundamental scientific enterprise: it gauges in the nature of the cosmos, it tries to formulate an answer on what is ultimately the nature of that what is.

The above scheme becomes



There is a problem installed in front of the actor, he takes a stance of distance and looks upon it from above. It comes down to the fact that in the “object focussing arc” the object component becomes specified as a problem and thus “the problem focussing arc”. In this all components constituting the whole of the scheme remain of importance: not only the object, but also the stance of looking upon from a distance.

The conclusion is evident: the same structure can be recognized in each of the three levels.

### ***A few comments***

- It might become observed that the object on the first level, a tangible tool is very different in kind compared to the object on the level of semantics, the problem as object of scrutiny. Here too there is a development. Cutting corners it comes down to

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<sup>10</sup> At this point the narrative acquires the character of a problematization, it becomes problematization.

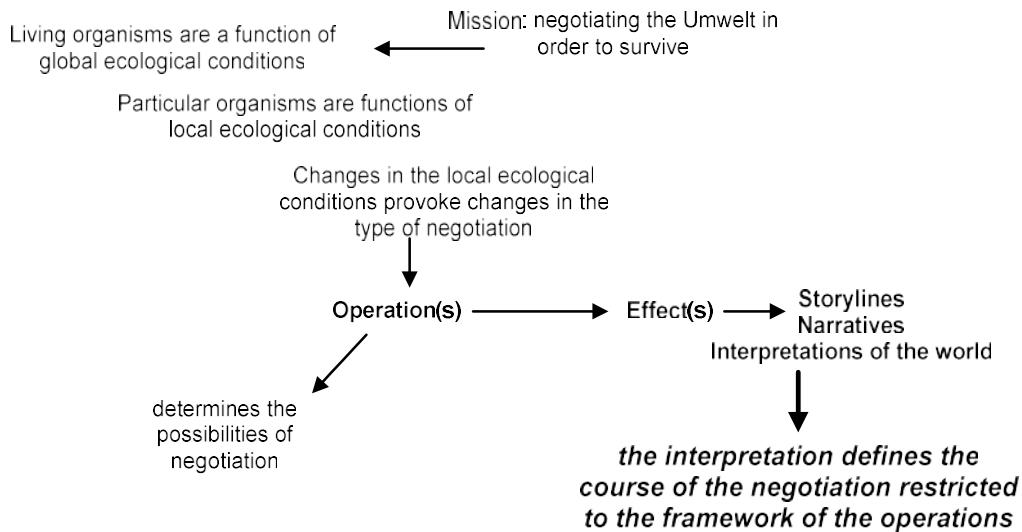
- a) Repeated concrete actions drive the perception in the direction of a selection of formal characteristics.
- b) Through practice and taking a large window of time into account, the environment becomes viewed as a set of manipulable items.
- c) The next step is that whatever is subject to manipulation becomes to be labelled as an object. (As for instance verbal thoughts can be manipulated by the manipulation of means called symbols, verbalized thoughts become objects). It needs to be mentioned that this is a subject needing a proper contribution.
  - Did the development coined “anthropogenesis” inevitably force into the type of Western thinking? There is absolutely no reason to assume this. The whole world could have been dwelling in myths for ever. It was only by coincidence that in a certain region the circumstances were thus that this concept “the invariable” got introduced.
  - This development is not to be understood as a radical switch let alone an abrupt one. In the beginning of the Greek thinking it too was devoted to higher goals such as living a virtuous life in accordance to truth. Actually the mythical dimension never evaporated completely. On the contrary it still shows outbursts of activity and blind commitment. But it was at the point mentioned that interest in the nature of things became questioned, a movement once set in motion increasing more and more until it became the dominant paradigm in Western culture.
  - This development not only took place on the level of quantity but also of quality. In the transition from the 16<sup>th</sup> into the 17<sup>th</sup> century the focus on the measurement of things and moments in procedures became a central topic. In the atmosphere of Galileo everything which could be measured had to be measured and what was not measurable yet should be made measurable. From this moment on the efficiency in answering the question into the nature of things increased in an exponential way. Another moment of acceleration occurred in the 19<sup>th</sup> century when the cooperation between the findings of philosophy of nature i.e. science fused with technical inventions.
  - A growing interest in the way of cognizing and the quality of knowledge as a product marked another turning point. Here knowing folded back on itself. The relevance for the actual context is that the act of scrutinizing and bringing forth knowledge itself became the object of that activity.

## Bridging the essays

Recall the formal scheme

$$\text{Operation(s)} \longrightarrow \text{Effect(s)}$$

In the previous part the attention went on the structure characterizing the side of the operations  
Somewhat more elaborate it takes the following form:



In the second essay the focus will be on the effect in particular the importance of the ability to bring forth narratives allowing an interpretation of what is going on in the environment.<sup>11</sup> Interpretation could as well be understood as the content of knowledge. But what is knowledge, the human type altogether? As mentioned in the introduction, this essay will discuss different themes.

The first will offer some thoughts on anthropomorphizing and anachronizing. The second will be about explanation, a concept only belonging to the human register of meaning. The third chapter offers a clarification on the technique and especially on the power of projection. The last part is the boldest. It looks the question directly in the face: what is the nature of 'human' knowledge?

It is time now to move on.

<sup>11</sup> The qualification "allowing" is actually not correct as once in that mode, there is no way back. The human is doomed to produce narratives. Secondly it is necessary to be aware of the restriction imposed by the framework defined by the operations. It is quite easy to understand. Take driving a car. Once in the car and engaged in the traffic one cannot, in principle, avoid following the logic involved in driving a car on the road. The same principle goes in the actual context. Interpretation, more general knowledge is brought forth within the framework set up by the operations in question. As will be made clear it is not an ethereal domain transcending all boundaries.



## **Second essay: Fathoming the nature of ‘human’ knowledge, touching the grounds of the human condition or, looking through the eye of the human**

This essay counts three main parts. The first discusses anthropomorphizing and anachronism as special cases of a general practices: interpreting the world through human understanding. It will be argued that it in all aspects is a human embodied enterprise.

The second part will be on one of the most if not the most pervasive technique in the act of understanding: projection. The final part looks the monster right in the eye: human knowledge what is it exactly?

### ***Part one: seeing the world through the eye of the beholder***

#### *Introduction*

Anthropomorphizing is a common practice. It is easy to observe in the expression of people holding a pet animal. Human moods and intentions are swiftly attributed to the animals as in the often heard “animals do not deceive” while honesty rising from a framework of values is a typical human characteristic. Animals have emotions and instinct, not values. This is the most common way to understand anthropomorphizing at the same time the narrowest as the practice reaches much further. It for instance becomes also applied in relation to objects. An old computer is said to be unreliable. A failing car can expect to be kicked as if it can be blamed and punished. As a matter of fact the expression just uttered that a failing car can expect... provides another example. Cars have neither expectations nor intentions to fail.

Anachronizing in turn is the practice to project interpretations relevant in actual events onto situations in the past characterized by quite different circumstances. The conviction that the human psychic architecture underlying appreciation of world and life remained unchanged over the centuries is not uncommon. In that perspective man from the Middle Ages is getting approached in the same way as if he was living today.<sup>12</sup> Tendencies typical for a capitalist mentality become recognized in behaviour from times long gone however the feudal way of life for instance was of a quite different order.

So far for some introductory lines, time to specify ideas.

Anthropomorphize and anthropocentrism are akin: man as the centre of the universe, the yardstick for raising an understanding of all what is out there. It might be taken so far as to endorse the anthropic principle: the conditions must have been thus that man had to come into being. This however is not the path taken here.

In this context anthropomorphizing comes down to the attribution of meaning from the point of view of the human condition.

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<sup>12</sup> In the introduction of “L’invention de l’homme moderne” the historian Robert Muchembled referring to the centuries preceding the French Revolution observes that a Freudian analysis could already be applied on the upper-classes but not on the peasants in the countryside. What is exactly what has been said. (Muchembled, R. 1988. *L’invention de l’homme moderne*. Librairie Artheme Fayard.)

The difference with the previous example is that in the latter case the projection is fed by the conviction that the interpretation providing background is the natural condition, while in the approach taken here this background is taken to be a particular perspective based on the human condition. In short, while in the first case the interpretation is taken as a natural truth, here is recognized that the perspective is taken from a particular form providing condition. Man has after all a particular way of negotiating the environment from which an understanding of the world follows.

The following observation is of importance. The human is able to provide a description of all this. Not as an independent observer – the latter being a fiction; but making use of exactly the same means and techniques used in the act of anthropomorphizing however restricted to a report of the operations executed.

Following the same line of thinking anachronism comes down to a specific type of anthropomorphizing projecting human characteristics proper to the present onto events and behaviours from the past.

The common feature is that from out one and the same frame of reference meaning is projected on the world. Two examples will be discussed: on the one hand the way the mythical phase is getting understood, on the other the concept of “explaining”.

### *The mythical period*

The introduction by the so called philosophers of nature of a particular way of organizing thought is commonly accepted as a turning point in the history of Western culture. Without exception this is getting confirmed in lectures and accompanying textbooks at the same time distinguishing it from the previous style characterized by the presence of mythical storylines. These become presented as examples of pre-scientific thinking.

Sounding familiar, doesn't it?

The thinking of the philosophers of nature is specific. It is characterized by what has been called the problematizing arc.<sup>13</sup> The philosophers of nature actually are the first to redefine some theme into a problem, installing that in the focus of consideration in order to provide an answer. The idea that this takes the form of an arc stems from the perspective taken. Considering is in a sense looking down onto something in order to investigate.<sup>14</sup> It goes without saying that in the previous period problems also occurred, but these were practical in nature: how to organizing a workforce, how to distribute food, how to conquer an enemy.... The problems introduced by the philosophers of nature differed in a remarkable way. They questioned the nature of things, of conditions, of virtues. Here not a practical solution was at stake but a probing into the very nature, the character, the essence of something. The original meaning of philosophy enters the scene: the love, the endeavour, the urge to know the true nature as a value in itself. This could lead to a right(ful) way of living. It took the form of true knowledge enrobed in an ethical dimension. What got known this way approached truth and resulted in a higher quality of life.

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<sup>13</sup> In for instance “Chalk lines providing the blueprint of Western thought” and the added illustration “The hype about the workings of the mirror neurons”.

<sup>14</sup> It is actually a particular application of the much older means-goal-arc or from a more dynamic point of view the move of mediated manipulation. The target in the actual case is not a tangible situation or a task to fulfil but a meaning or semantics. See also the first essay in this volume.

Cf. Gilbert, J. 2018. The Forgotten Transition.

The history of Western philosophy, eventually giving rise to the scientific thinking, is the history of the struggle with this type of problem setting. Of course, in the previous period life could be harsh also and as such problematic. But that type of problem was in a sense tangible. With the philosophers of nature life itself became a problem by questioning its own nature. The question was no longer ‘how to live in order to fulfil the needs of the community or of the ruler’ but shifted in the direction of ‘what is good life as a value on itself?’

Mentioned earlier: the mythical period is more than often presented as the run-up which inevitably had to bring forth the thinking mode of the philosophers of nature.

While this whole atmosphere did not even exist in the same sense for a feudal peasant a television set did not exist. This type of problematizing did simply not occur. Simplified the mythical period could be taken as a set of rules when confronted with the burdens of real life, on how to behave not as the art of pondering on the problem what the nature might be of that what is (*hoti esti*).

The introduction of the invariable further giving rise to the question into the nature of it might well be a historic contingency, maybe a spin-off of agriculture (version by Harmann) or the need for a decisive criterion (version Lloyd).

The bottom line is that taking the mythical period as the run-up into philosophy of nature having unavoidably to appear is nothing else than an anachronism. Starting from the familiar sphere of problematizing it comes down to reasoning in backward direction in order to provide a sense making explanation of the mythical period.

### *On the concept of explanation*

This does not hold an explanation of the previous part. Explanation as taken further is a theme in its own right however a similar type of dynamic can be recognized.

The following does not belong to framework of daily life. MacWhinney points out a condition of being ungrounded. Gärdenfors calls it being “detached”<sup>15</sup>. What is that about?

Animals are bound to the local and the actual. They answer to fluctuations in the Umwelt on the basis of genetic predisposition, implicit learning processes acquired in infancy and through experience later in life. Action and reaction are getting heteronomously determined. Reflection does not occur, neither does considering alternatives. This is not to be understood as the behaviour of an automaton, it expresses the condition of a dynamic organism.

Let us turn to the human. What is the common representation on the coming into being of the human species, the so called anthropogenesis?

Literature following Darwin consequently, suggests that the human once shared a biological condition with all animals. Remind Darwin’s sketch of the tree of life with branches all over. It is said that man is an animal distinguished from other animals only by certain features.

<sup>15</sup> MacWhinney, B. The gradual emergence of language; chapter 9 in Givon and Malle, 2002, *The evolution of language out of pre-language*. John Benjamins Publishing Cy. P. 239. Gärdenfors, P. 1995. *Cued and detached representations in animal cognition*. Lund University Cognitive Studies, nr. 38.

At a particular moment in evolution something took place which would enable man in the experience to detach himself from the local and the actual, the ungrounding as called by MacWhinney. He could realize a displacement in space and time. He could think about events happened earlier and in another place, or think of events which he would like to execute in the future as planning a hunting party.

Becoming able to realize this they could partially – in the experience - transcend the factual condition of existence. Partially because they still were bound to local ground and the actual moment, but by being able to consider, room for experimentation became available.

This development often gets depicted as a breaking point, a moment of radical transition. Quite rightfully so, as no other animal has ever shown signs of this skill. But just as often this fact is getting depicted as a moment of unhingedness, the feeling of security and safety lost. In a far later and more sophisticated form of interpretation it becomes depicted as being caught in a symbolic order opening a shortage, a manco.<sup>16</sup>

Hence the reference offered to ungrounding, having lost ground or attachment.

By the new ability<sup>17</sup> to provoke in the experience displacements in time and space, in a metaphorical sense room is getting created allowing to interpret the condition in which one finds himself. Calling this room is only a topological metaphor for the ability allowing multiple versions<sup>18</sup>. It is characterized by a specific register of meanings such as “intellectual understanding” and “explaining”. These are not general terms to be used in all possible circumstances but belonging exclusively to the register brought forth by the ability acquired. This is an asset not existing earlier.

It will be obvious that a particular version, i.e. an ordered sequence of displacements in space and time, is not popping up haphazardly. A version is an instrument to raise an understanding of the environment, better still to realize a grasp on changes taken with a somewhat tangible connotation. But when “understanding” commonly is getting mentioned, getting grasp in that sense is not the first thing thought of. Getting grasp is understood intellectually i.e. getting grasp on elements of the environment *by manipulation of mental content*. It should be stressed again and again that these contents bear the character of displacements in time and space.

“Becoming detached” has a positive connotation. It suggests liberation. “Ungrounding” on the other hand sounds rather negative suggesting the loss of solid ground under the feet.

However the question is if it is justified to speak of a loss of certainty characteristic to the previous condition in which behaviour was provoked in a direct way by the conditions of the moment?

That becomes difficult to assume because a feeling of loss requires a being conscious of the previous condition, a consciousness or a knowing that - in that stage - did not occur. It is similar to what is known as “child’s amnesia”, not being able to remember passages in life prior to the acquisition of language. The earliest memories always float on wording. In the context discussed something similar occurs. The moment the new opportunity is finding introduction, there is no form of awareness of the previous

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<sup>16</sup> The symbolic order is another way of describing the linguistic type of world the human lives in made possible by the manipulations of second order stimuli as coined by Vygotsky. The “manco” gets also called the symbolic castration.

<sup>17</sup> I feel reluctant to use the term faculty because it inclines to the suggestion of some source from which the ability sprouts while ability itself is closer to operations to execute.

<sup>18</sup> I guess that Dennett had a similar intuition when referring to multiple drafts (Consciousness explained, 1991).

period because that type of consciousness is precisely brought forth by *and only by* the new ability. What preceded vanished in oblivion. But even that is the wrong way of expressing because oblivion suggests that something can be forgotten. In this case there is even nothing to become forgotten, the day of yesterday did not exist, because remembering its existence requires the abilities of the new opportunity. So in this case a similar type of amnesia occurs. What happened in the past did not exist in the same way for a peasant in the Middle Ages a television set would have been unimaginable.

It happens that a miss of firm ground is getting mentioned with it inducing a feeling of being confronted with an abyss. This urges for a storyline able to explain and maybe how to handle this disturbing condition.

Is this condition then not indeed provoking a feeling of being uprooted?

An answer requires taking a particular window of time into account.

In first instance it would be wrong to consider the introduction of the new opportunity as a sudden turning point confronting the involved abruptly with a new and in this case disturbing condition, yesterday being determined, today forced to make a choice. If this development followed the same pace as the development in the fabrication of stone tools, then a window of time of at least one and a half million years – if not even more, should be taken into account. Compare to the actual period of fourteen thousand years since the introduction of agriculture and it gives an impression of the pace of the changes taking place.<sup>19</sup> A very long period may be assumed taking the introduction of proto displacements in the experience into the composition of more complex storylines. It must have been a development in conditions of a very slow decreasing of heteronymous determination countered by an even slow increase in autonomous decision taking. In these conditions a sudden feeling of loss of firm ground is unlikely if at all.

With this background a depiction comes in place of an organism that very slowly and quite intuitively from within immediate situations found results experienced as favourable, an effect stimulating to further trying out, gradually acquiring a better skilfulness. This movement takes the form of a forwardly aimed exploration rather than being fed by the disturbing feeling of a threatening abyss urging for alleviation. The terms “manco” and “symbolic castration” dwell in a similar atmosphere as abyss.

It goes without saying that considerations as just offered are no more than assumptions speculative in nature. The idea is to sketch out an alternative for the character of a darkness and dooming fatality, an atmosphere in need of alleviation.

Thirdly imagine for a moment an inhabitant of Sumer or a peasant surviving the feudal conditions of the Middle Ages. Would they be bothered by thoughts of being uprooted? The mythical phase discussed earlier in mind, more than probably they would not. They rather would be occupied by the harsh conditions in order to survive or with the pressing demands of the rulers. The presentation in which man seems to be confronted with an abyss in that sense only appears in a certain historic period.<sup>20</sup> More precisely it was the period in which the human became a problem to himself. Recall the philosophers of nature. The problem then was the quest into the nature or the essence of that what is (*ti esti ti*). The

<sup>19</sup> The relation of the adaptation of stone tools and the introduction of the provocation of displacement in space and time has been discussed in Gillbert, J. 2018. *The Forgotten Transition*.

<sup>20</sup> The medieval peasant probably felt confronted with the doom of hell but that was something else altogether.

history of philosophy for a long time became the history of the different ways or storylines providing an answer to that question. Fifteen to sixteen centuries later the subject changed. Doubt arose about the quality of the stories offered, in fact the ability to know itself became questioned. Scholars such as Descartes and Kant were important players in the discussion on the nature of knowing and knowledge. It is precisely in that atmosphere of doubt and questioning that presentations originated in which the new opportunity presented as a symbolic order suggesting an uprooting, a black hole, a man saw the light of day.

One could argue that this is a case of making progress as if the latter presentation would offer a more mature version than the previous. But the idea of making progress also is a historic version to a considerable degree driven by the development of the “scientific” practice since Galileo.<sup>21</sup> If the qualification “progress” is to be used than only in relation to successful negotiation of the Umwelt thus instrumental, not in relation to a more truthful version.

Approaching a conclusion, terms such as explaining, intellectual understanding and interpretation, follow from the introduction of becoming able to introduce in the experience displacements in space and time, eventually combined into storylines. They are exclusively imbedded in that introduction and cannot be positioned as a complement to a previous condition. The latter can neither be considered an access or a stepping stone in the same sense that being quadruped is not the stepping stone into becoming bipedal. It concerns contingencies.

Agreed, engrained in the mainstream way of thinking it might come hard to grasp, but it actually is not all that difficult. It comes down to the insight that the actual frame of reference providing an understanding, a frame of reference taken to be natural and evident becomes projected as one big equalizer.

In so far a difficulty might appear than it is not situated on the level of the content of the storyline (ways of meaningful explaining<sup>22</sup>), but to realize that it is all about the structures organizing the different stories. As for instance the structure in which something is posed as a problem which consequently has to become considered, is a structure not present in the previous period<sup>23</sup>.

## ***Part two: projection as a particular technique***

1. The projective method falls back on two components: a source and a goal domain. The first offers descriptions of what is understood. The second is in first instance unknown. But based on some features of similarity, that domain is made understandable by projecting known facts from the first. The structure of the atom discovered in the early years of the 19<sup>th</sup> century for instance has been made understandable by projecting onto it the model of celestial bodies and encircling planets as described many centuries earlier. Or consider the expression “I feel a pain as if needles are forced into my leg” and, “water is

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<sup>21</sup> “Science” has been bracketed because it was actually philosophy of nature as a practice which would flow into science as a mode. The term science actually only got coined by Whewell in 1834 and only firmly installed by the end of the 19<sup>th</sup> century.

<sup>22</sup> The different answers given to the problem “what is that what is?” such as water, fire, earth, apeiron, atoms...

<sup>23</sup> Equally not existent in other still actual modes such as revelation, religious belief, new age versions etc.

running over the walls". The latter example wants to clarify that water is showing behaviour of the same type of a man is moving making use of legs (only man has).

It could as well be said that what is unknown is obtaining clarification by describing it in terms of what is known. So far the presentation of the basic scheme.

2. Projection is based on the recognition of a similarity of elements present in both systems. Referring to "a camel as the ship of the desert" then a similar movement is recognized. It does not suggest that a desert of sand is similar to the ocean. This example clarifies a similarity but at the same time points out that a misleading connection is also possible. When an effort is made to understand the psychic condition of people living in times long gone then two components are at hand: people and psychic condition. It will be clear that biological similarity of people now and then does not in itself allow to conclude similarities on the level of psychic condition. The peasant of the Middle Ages held very different beliefs underpinning moods and guiding behaviour than someone living in the present.

The large coloured eye spots of panda's show similarity with the large eyes of babies hence their appeal on people to engage in cuddling. Ethologists however will caution that a panda is whatsoever still a bear and can be dangerous. Anachronism occurs in the case a similarity is wrongly attributed across different moments in historical time. In the other case of animal behaviour being described in terms proper to humans can be spoken of anthropomorphism.

Concluding, projection allows a nearly endless increase of knowledge but it at the same time has been made clear that the risk on mistaken projections is real. This has also been made clear by the examples provided in the discussion on myths and explanations.<sup>24</sup>

3. Cases of projection discussed occur between clusters of configurations whereby orderings not yet understood are getting described in terms of clusters understood. But outside of this context and on the most fundamental level imaginable there is yet another dynamic deserving to be coined projective in kind. What is it about?

The use of the term 'perception' is not non committal. It implies a particular point of view.

Just the use of a dedicated term makes it appear as if it is something existing on its own. At least it can be studied as an isolated domain provoking the impression that for the workings of that domain all what surrounds it is of no importance. A presentation of this kind holds a particular way of selecting and ordering of elements. This means that it suggests a particular view on man, by extension on any organism. Being aware of the fact that this is actually a particular perspective allows bracketing by this creating room for another perspective.

People, organisms in general are living creatures. In line with the previous remark, here also one has to resist the tendency to consider a living organism as some isolated and encapsulated unit. That idea has actually a historical origin, a subject which would lead too far, hence not discussed here.

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<sup>24</sup> The different forms of projection increase the possibilities of the prototypical language competence in an exponential way, the latter itself based on the manipulation of second order stimuli. For this subject the publications of the movement around Lakoff are recommended. In my opinion it is precisely that technique lifting the prototypical mode of language to an adult level. Mechanisms underlying syntax, for a considerable period considered to be the deus ex machina of linguistics are relatively simple dynamic ways of ordering as Chomsky himself explained in the minimalist program. (Chomsky, Hauser and Fitch. 2002. *The Faculty of Language: what it is, who has it, and how did it evolve?* Science, vol. 298, issue 5598; pp. 1569-1579.

An organism is a function in the sense of derivation of the conditions and circumstances in which it came into being. Without these it would not be at all. Bacteria as a sample of the earliest living creatures did not appear from thin air but from particular conditions.<sup>25</sup> Living creatures are characterized by a process of metabolism, there is construction and breakdown. So there is a dynamic tension between the organism and the environment in which it thrives. But not everything is advantageous. The organism in itself already consists only of a selection of what is available and the existence, i.e. taking in building material, is in line with that coming down to a process of selection. Some elements are food others are harmful and to be avoided. It could as well be called sensitivity as a discriminating competence.<sup>26</sup>

Mentioning selection and sensitivity in function of survival is another way of referring to processes commonly called perception.<sup>27</sup>

The approach offered so far stresses the dynamic intertwinement of organism and environment, and the sensitivities serving metabolic processes. It has nothing to do with offering explication in function of unveiling some truth, the context in which perception is commonly getting understood these days.

The sensitivities and the selectivity in rendering “a picture of the environment” following from it is getting determined on the one hand by the characteristics of the body of the organism and on the other by the condition of the moment of the primary motives. Grazers have other sensitivities for building material than earthworms.<sup>28</sup> On motivation, if there has a satisfying quantity of ‘food’ been taken in to keep the metabolism running, there will be little pressure to drive up the motivation.<sup>29</sup>

In summary the abilities characteristic for the body of the organism concerned in relation to the conditions of the moment determine selection by the sensitivities, otherwise coined “perception”. From another perspective described it could be said that the content perceived, the “image” realized, is a projection of the mentioned abilities and condition.

If the use of the term “meaning” would not be characteristic in a sense exclusive to human practice,<sup>30</sup> it could be said that the condition of the immediate surroundings falling within the reach of perception obtain meaning. Recalling however the previous part, this is a case of anachronism. Meaning as presently understood does not occur yet. There is however a dynamic fully biologic and exclusively aimed at negotiating the fluctuations or the burdens of the Umwelt. Likewise, referring to the meaning of the environment for an animal is a case of anthropomorphizing. For an animal managing the tension in relation to perturbations happening, in short relation regulation, is all what is taking place, and this always from the perspective defined by the characteristics of the body and the condition of the primary motives of the moment. The idea itself of “perception”, the act of conceptualizing a selection of dynamics and features into “perception”, is the product of a way of thinking occurring against the background of particular historic circumstances.<sup>31</sup> This testifies of a different storyline or version,

<sup>25</sup> It is not a coincidence that a human body holds 50% of water, a new born even 75%.

<sup>26</sup> For a more elaborate approach, Marc van Duin, Fred Keijzer and Daan Franken (2006) on minimal forms of cognition

<sup>27</sup> Strikingly perception goes back on the Latin *perceptionem* or *taking cognizance*. This puts the meaning of the term in an already much later – the 15<sup>th</sup> century - developed frame of reference quite different to the rather biological approach taken here.

<sup>28</sup> There are of course also sensitivities in other domains such as finding a partner for procreation, ward off threatening instances etc. But the dynamic is similar.

<sup>29</sup> Lions having eaten rest and leave potential pray often for what it is.

<sup>30</sup> This way of applying the term occurs much later in the development.

<sup>31</sup> As already has been mentioned, perception as understood in the 14th century referred to understanding plain and simple. That changed into the study of processes on the level of physiology and psychology (*Gestalt* for instance). A historic development also occurred here.

discourse, different from the period in which language was an act mainly. Remind the example in which a child calls for its mother.<sup>32</sup>

The human species developed skills based on a particular systematic involved in mediated manipulation and the use of dedicated means, originally tools later symbols, allowing to give expression to acts performed and by doing this manipulate these such as in reordering and by all this expanding the world in the experience, the world experienced.<sup>33</sup>

This ability introduces a different form of meaning than the one raising form projection as described in the previous paragraph. From then on the purely embodied mode is becoming supplemented and sometimes replaced by the effects raised by the manipulation of means in the function of stimulus of second order. But the move, the dynamic remains the same. In the first instance mentioned the projection is related to the characteristics of the body, in the second it is related to the system of executing some action, mediated manipulation in particular.

At this point a comment is in order. Taken what has been said to its full consequence that implies that the idea of an independent observer somewhere outside the field of action, the so called Achimedes' lever, cannot exist in that setting.

The newly very slowly developed approach based on the use of means, brings forth a frame of reference in which term as perception, knowledge, intellect and understanding become introduced.

This is a path exclusively taken by what would become the human species; and as such the application of the terms mentioned implies an act of interpretation unavoidably characterized by a perspective of anthropomorphizing. From then on this will become the unique vantage point from which the world and all that happens in it will be understood.<sup>34</sup>

The condition of being a human is defined by exactly this, and once taking part in this mode, stronger still being transformed into this mode, there is no way back.<sup>35</sup>

As such this exposition is not to be taken as critique.

The aim of this part is to point out that the introduction in phylogeny of a particular perspective can be pointed out. It becomes an anthropomorphizing fallacy the moment this condition is taken to be the natural way of things to be, a natural frame of reference and as such criterion to appreciate all what is.

In this part a tension between two appreciations was in play. On the one hand, dominant in common thinking and in literature, the idea lives that man in first instance is a creature driven to know. The alternative takes the perspective of embodied instrumentalism. It holds that man like any other creature alive in first instance is driven by survival and from that perspective is aimed at negotiating the fluctuations of the environment. Knowledge from that point of view is an instrument. It will be clear that the texts offered so far take the stance of the latter position.

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<sup>32</sup> A child calling for its mother does not attribute a denomination to a living creature; the call "mother" collapses with the creature.

<sup>33</sup> For an elaboration, cfr. Gilbert, J. 2018. The Forgotten Transition; chapter 2 in particular.

<sup>34</sup> "Unique vantage point" in contrast to the conviction that it reflects the World as it really is out there.

<sup>35</sup> For a discussion on the condition of irreversibility, reference again to Gilbert (2018)

### ***Part three: looking the monster in the eye, what stuff is knowledge made of?***

It is now the right moment to confront the problem.

For quite some time I was convinced that knowledge is not something standing on its own but a dimension of being alive, a dimension which has been selected, isolated, encapsulated and elevated to a concept.<sup>36</sup> Whitehead called this type of intervention ‘the fallacy of misplaced concreteness’ because after having been conceptualized it became appreciated as something really existing in that manner.

It has however become clear that this misleading reaches much further than would appear at first glance. On closer inspection what has been called knowledge consists mainly of contents in the experience, contents bearing the character of displacements in space and time.<sup>37</sup> In other words these are human made constructions in the same way as window frames are. This comparison is not as daft as it might sound because window frames exist only by humans having introduced and made them. The same goes in the case of this type of knowledge: it only exists because humans introduced and realized it.

Summed up in one sentence, knowledge is a construct introduced in the experience by the manipulation of stimuli of second order provoking a content characterized by a displacement in space and time.

This statement bears remarkable consequences.

Mentioning knowledge comes down to speaking about something which is construed on the basis of operations (1) subsequently projected onto the environment (2)<sup>38</sup> at the same time acquiring the status that it in that form really exists out there (3).

This way of thinking does not change the usefulness of the enterprise and its products but undermines the mainstream appreciation; an appreciation that without the slightest form of reluctance is taken to depict the natural way things are.

This insight so far is already quite remarkable but it becomes totally so considering that this type of understanding is becoming projected on all other creatures alive including the accompanying conceptual register such as “they understood, they know...” by this suggesting that animals do something like understanding. With that perspective as an organizing filter, the animals are submitted to all kinds of test situations proper to human beings such as finding food hidden in a maze, or get hold of food locked into a complex puzzle like contraption or behaviour psychological techniques are getting applied in order to find out how far they cope in learning human like symbol systems. It makes it appear as if the human approach is a neutral and totally objective technique in which human characteristics are absolutely non-existent.

#### **Interim consideration**

We consider ourselves as thinking human beings. We consider other animals in particular the warm blooded ones most akin possessing some primitive form of thinking, certainly not the verbalized type as they do not show sign of a language based on the use of symbols.

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<sup>36</sup> Isolated was: bodily sensitivities or sensory stimuli, methods in approaching obstructions (heuristics), procedures which in the past have been successful in dealing with certain types of burdens... all collected under one umbrella.

<sup>37</sup> For a more extensive discussion on “displacement”, Gilbert, J. 2018. The forgotten transition. Also Gilbert, J. 2021. Realizing human cognition in the cross section of being alive.

<sup>38</sup> Observe that is not spoken of scenes in the environment for the simple reason that the projection itself organizes relevant stimuli into scenes. (simple example: being hungry focuses on anything which could serve to feed).

But what about a cow, a fox, an ape or an eagle? Would those creatures from out their perspective consider this ability? Would they consider having a thought? That is however the wrong question. The right one would be: do they even *consider* at all? Realizing that these types of thought such as questioning and considering only are produced by human abilities and hence from out the human frame of reference, the question arises into the condition the animals find themselves in. And even that question itself can only be phrased from out the human perspective. This should convincingly make clear that whatever we think *always* departs from the human condition, that any thought about any subject at all is *always* taking a human perspective.

Is this statement taken to be critical? Do animals not have knowledge then?

An attempt to provide an answer requires caution because the word ‘knowledge’ covers more than one payload.

When humans mention knowledge it seems to consider one thing and one thing only. But as a matter of fact the human knowledge is an amalgam whereby it is even not clear if one mode of it rightfully deserves to be called this way and so the risk is that speaking about knowledge in practice comes down to referring to very different things altogether.

What is going on in the case of animals?

Animals are in a condition which could be coined “relation regulative”.<sup>39</sup>

It comes down to a general experienced condition fed by the particular types of sensitivities and motor abilities the body features, all this in a tension with the state of the primary motivation, the whole resulting in behaviour providing strategies based on inheritance, upbringing and experience. This condition “translates” in a particular way of an intertwined tension with fluctuations occurring in the immediate surroundings, the Umwelt as the world construed by the abilities of the body – so called by von Uexkull.

It is for a human observer – let’s not forget: provided with the frame of reference humans have developed – possible to recognize in all this, better still to configure aspects into one concept “knowledge”. It has to be clear that what is assumed to be knowledge in the behaviour of these animals is after all a human projection or construction. It is more than plausible to accept that this appreciation is not in any sense part of the world experienced by these animals. For an earthworm or a pig the very idea of something like “knowledge” is in absolute sense alien, it is of a completely different order.

So it has to be confirmed, animals testify of some feature which *from a human perspective* can be called knowledge.

But it does not end here.

Humans have become able to introduce in the experience a displacement in space and time, a meaningful content which apart of other designations such as imagination also can be considered knowledge.<sup>40</sup> At this point no statement is made about the accuracy of the content; in focus is the fact that a meaningful content can be introduced.<sup>41</sup>

But that mode of meaning is of a very different type than what has been mentioned in the case of the animals. In the end it allows to compose meaningful storylines, meaningful scenes characterized by a register of terms only having meaning in that very frame of reference. It embraces concepts like man,

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<sup>39</sup> This idea has been borrowed from the approach explained by Watzlawick, Bevillas and Jackson in the publication “The pragmatics of human communication” dating from 1967.

<sup>40</sup> On the different types of giving meaning, cfr. Gilbert, J. 2021. The particularities of Western thinking.

<sup>41</sup> The central role of being able to bring forth meaningful content, in other words narratives, has also been suggested in the publication of Ferretti et al. (2017) concluding that “we proposed that the study of human communication has to be tied to the study of the cognitive systems underlying storytelling.” Ferretti, F., Adornetti, I., Chiera, A., Nicchiarelli, S., Magni, R., Valeri, G., Marini, A. 2017. Mental time travel and language evolution: a narrative account of human communication. Elsevier: Language Sciences; xxx, 1-14.

animal, soul, consciousness, mental, perceptual and in the same atmosphere knowledge, understanding, intellect and even meaning as a concept itself.

But something remarkable is going on. Both modes are present in the human.<sup>42</sup> This distinction is however never made. In the common understanding “knowledge” is represented as one single subject. Moreover it becomes in that form projected on the animal way of being and by this inviting the human researcher to investigate animal behaviour from the only frame of reference he is familiar with. One has to keep in mind that this type with its register of meaningful terms is completely alien in the life of animals.

But things aren't all that simple for the human too because “knowledge” is getting appreciated in different flavours.

1. There is knowledge understood as the objective, reality corresponding description of the world.
2. There is also a more moderate form of (1). Scholars not joining the line taken by naive realism and opting for the idea of knowledge as a model for instance, more than often still treat knowledge as a subject which still can be studied as something existing in an isolated form.
3. Awareness exists that knowledge is a filter projected over all what is; not only a filter but even more an instrument allowing to negotiate the environment.
4. There is the condition which non human animals find themselves in, a condition in which concepts such as knowledge, understanding, explaining and the like do not at all exist.

Does that imply that research into something as knowledge in animals would be of no use? Of course it does not. But the bulk of the literature testifies of never making a distinction between the modes mentioned, hence formulating statements on animals making use of concepts which strictly spoken only are applicable to human practice. Some recognize *politics* within the animal *tribe*. As a metaphor an acceptable approach, but it more than often becomes understood quite literally. Some – and not the least in the field of ethology - even pretend to discern basic forms of moral in animal behaviour. This is an absolute nonsensical form of framing as moral expresses the use of a certain criterion on the basis of values, a qualification and a practice complete absent in animal life.<sup>43</sup> Animals interact driven by the condition of the primary motives of the moment, kinship within groups and hierarchical relations constantly under stress, they testify of brood care, engage in temporal alliances to obtain food or a mate... but moral? Alas in publications of the kind an argumentum ad hominem plays. Some scholars have a high reputation in setting up ingenious test situations rendering interesting sometimes stunning results. This then radiates on all what is offered as an interpretation. But reporting observations is one thing, the interpretation quite something else.

## Conclusion

The conclusion to be made is at the same time trivial and far reaching. The way the human understands the world follows or is derived in a direct manner from the abilities and facilities the body provided,

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<sup>42</sup> Anticipating the fact, that the depiction of the animal condition is actually a projection only made possible by the mode proper and exclusive to humans. This should be mentioned but should be “bracketed” for the moment as it would complicate the understanding.

<sup>43</sup> Nonsensical here is used in the proper meaning of not having sense. It is in no way meant to be understood in a disapproving way.

allowing to cope with the burdens present.<sup>44</sup> That is self-explanatory and by this trivial indeed. Yet this obvious fact seems to be neglected while what actually are human projections – products of the human body - become taken for natural occurrences.

Looking back the belief of phlogiston as something really existing might today seem laughable, but it has been taken seriously for more than half a century as reflecting something existing really out there.<sup>45</sup> The same is the case for the model of an atom mirroring a planetary system or in a more abstract way think of the quote made by Hawkins that science in the very best of cases only brings forth models. These are yet a few examples of the fact that what the human “sees” in the world are projections, human constructs. But these can still easily be grasped by the understanding. The fact that this very same dynamic also is applied on the lowest of levels involving concepts such as body and mind, intellect, knowledge, explanation, understanding, communication etc. taken absolutely for granted, is getting totally overlooked.<sup>46</sup> These too are products brought forth by the manipulation of means functioning as second order stimuli thus provoking in the experience displacements in time and space, in the end installing what is called the human condition.

That is the core of the insight expressed in this contribution.

The way the world seems transparent to the observer in a self evident way can only exist brought forth by the operations generating displacements in space and time. Precisely by this type of action the world takes the guise of becoming unfolded into a multiplicity of human produced displacements in space and time, meanings or scenes from a different order than these in the animal condition mentioned earlier.

Taking a more prosaic turn it could refer to Genesis 1.27 “God created man in his own image (...).” Man in that case actually being a projection of the divine instance. But Feuerbach in 1841 in “Das Wesen des Christentums” quite rightly reversed this move by stating that God was nothing else than a projection of human values.<sup>47</sup> What Feuerbach did took place on the level of the content of the story, the semantics so to say. The whole of the idea should however be taken to the level of the technical application “man is bringing his world into existence by projecting onto the environment the structures and contents of his human condition”.<sup>48</sup> The latter referring to the ability to bring forth in the experience displacements in

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<sup>44</sup> Some simple analogues: if the spectacles have red glass everything takes a red guise; if one only has a hammer then everything becomes seen as an application in relation to the act of hammering. In the same sense: the life-world of an earthworm is derived from the facilities of the body characterizing an earthworm.

<sup>45</sup> Stahl introduced the idea in the early 18th century while oxygen became defined in the 1870's (Priestley and Lavoissier).

<sup>46</sup> Communication in the human sense of transferring information has been discussed in The Forgotten Transition, chapter VI, Seven Misconceptions. Animals regulate their relation but do not engage in exchanging declarative information. From a human point of view in which this type is dominant, aspect of their behaviour could be interpreted in that sense. Think of the intricate dances exposed by some male birds to attract a partner. It is often said they convey messages. This is again an example of anthropomorphizing.

<sup>47</sup> In an anecdotic way one could also refer to Huxley pointing out to William Thomson that one only gets out what first has been put in, an in a similar vein to Kant (Critique of Pure Reason, BXIII). It comes down to stating that a system is determined by the premises supporting or giving rise to it. In this case the human condition standing for the ability to reinterpret the world taking the place of the premises. And that is underpinned by the skill to provoke displacements in space and time in the experience. So the result produced cannot be anything else than confined by these basic building blocks. In a way I have the (maybe faulty?) impression that Gödel's incompleteness theorem could be understood likewise.

<sup>48</sup> If the nuance of semantic and technical level might be difficult to grasp, take “making bread” in mind as an illustration. The technical level involves the material and all the procedures needed to produce a loaf. The form, colour, smell and taste are elements making out the semantic level. Furthermore, the idea of making a world is often ridiculed by the reaction that man creates the world outside only by the force of his mind. The correct reading should be: he organizes input selected by the sensitivities of the body out of chaos out there (deduction!) into meaningful configurations making use of the abilities provided by the body he is. Hence an air born bird has another world than an earthworm. The projection to be mentioned is one step further in this enterprise.

space and time, in turn made possible by the manipulation of stimuli of second order, itself being a particular application of mediated manipulation.

So what is human knowledge – as we as humans understand it - in the end? It is not a sign left by a revealing God. It are not elements standing on their own out there waiting to be unveiled, a point of view shared by many in the natural sciences.

Inevitably product of embodiment it cannot be else then a set of displacements in space and time selected and organized along the line of a particular criterion and further projected onto the environment.

And, it is not a non-committal product. It feeds the (re-)interpretation of the world. This is not a choice. It is the result of pre-adaptation and education, with the particularity that once in that mode there is no way back. Hence one is in a sense doomed to interpret, at least accept interpretations produced by others (religion, common thought, science...)<sup>49</sup>

As an interesting comment in the margin, the above has a comprehensive and penetrating consequence on the psychic life of the members of a particular culture. There are three elements involved.

The first is the fact that whatever we do or whatever the condition we find ourselves in, it is always enrobed in a commenting discourse. As mentioned before once educated we are doomed to bring forth narratives. The second element is the set of discourses or versions by Wittgenstein referred to as "Lebensform" are not random or non-committal. They belong to a finite set of interpretations characterizing the culture one belongs to. People living in the Far East will share storylines different to people living in the West or aborigines in the forests of the Amazon. So how we actually interpret the world and what is happening in it is defined by a particular selection of the set of interpretations accepted in a particular culture. Why a particular selection? Because in one culture there are different versions and flavours related to different peer-groups related to different sections of social life such as profession, family, hobbies, sports, politics, religion etc.

The bottom-line is that the way we appreciate events in our lives – that is the third element - is to a large degree determined by the scenarios that were taught to us.<sup>50</sup> To a large degree because there remains basic interpretations tied to the condition of the primary motives like mortal fear, sexual drives etc. What is considered neurotic in one culture might be normal in another. It will be clear however that this has a profound impact on the psychic life and well being of the individuals concerned.

One more elucidation has to be made.

What is the statute of this contribution in the light of what has been exposed?

The text offered descriptions of how things appear to be, the phenomenal dimension however focussing on the operations and the products created. This could get accomplished only by that very type of operation itself. These operations are implemented onto the "animal condition" whatever that might stand for, at least referring to the condition in which that type of operations – mediated manipulation and the application of stimuli of second order – are absent. By this very act it is an instantiation of exactly that what has been described. It exposes itself as an action and unfolds itself as the product.

<sup>49</sup> Gilbert; J.F.R. 2021. Building cognition in the cross section of existence.

<sup>50</sup> Eric Berne offers a overview of scenario's in *Games People Play*. 1964. Grove Press.

It deserves to be stressed once more; this disquisition is not at all meant as a form of critique. It could not be because it precisely exposes and expresses that what is underpinning the human condition, in a gigantic burst covers all what is touching the sensitivities into a particular meaningful guise making use of displacements as described.

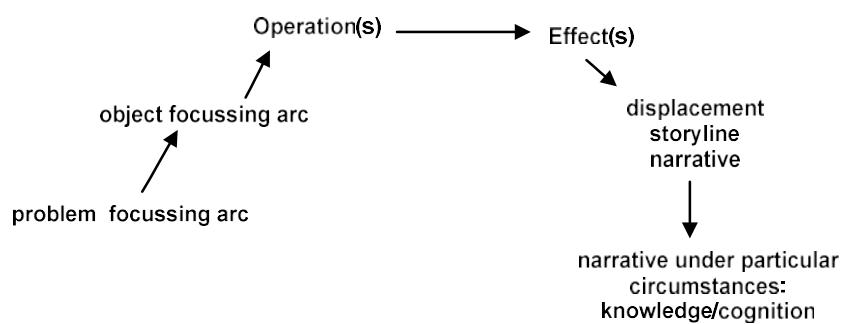
If there is a shadow of critique then it is only about the dimension of deep anthropomorphizing bringing forth effects becoming taken for what is called reality. Even the latter term only has meaning from within the mentioned human frame of reference.

## General conclusion

This contribution is somewhat different from all previous. These aimed explaining how workings could be described in terms of operations. It was more a sharing of an insight. The present text wants to pinpoint the essential characteristics of what is commonly called the human condition not in the usual sense of the totality of experiences but as the exposition of these characteristics making the difference compared to other animals, the most akin in particular. The conclusion is evident: what has been reported is not present in other animals.

The approach is action theoretical, encompassing instrumentalism and operationalism. Instrumentalism holds that the very first motive is not finding truth but negotiating the Umwelt in order to survive. Operationalism in turn stressed that these efforts can be described in terms of operations. Activity theory as the umbrella term holds that all this occurs in the form of actions in principle executed in the public arena.

The contribution took the form of two essays in accordance to the simple scheme of an operation producing an effect.



The Core as the first essay focuses the structure taking the form of a particular stance in relation to what is present ready to be manipulated. It not only lays bare the structure of the stance but also explains that this “arc” can be recognized on different levels, the anthropogenic in the first place but also in the particular Western way of thinking.

The second essay focuses on the effect in particular how it is getting experienced and what the consequence of that experience is on further behaviour, broader negotiation of the Umwelt.

Here too different windows are opened. The first is about the ubiquitous presence of the human view on whatever happening in the world even if it has nothing to do with humans at all. It was made clear that the gaze is in an absolute sense anthropomorphized. The second part focuses on the subject of explanation and the central role of projection in this. The third at last looks the problem straight in the eye: what is human knowledge actually? Taking the preconditions serious it cannot be else then a set of displacements in space and time selected and organized along the line of the criterion defining what has to be counted as knowledge and that then further projected onto the environment. Not a just so realisation but with a function: interpreting the environment.

The bottom line is that it is all about interpretation of the world from out a particular stance: an object or more precisely a problem focussing arc. That might well be the most accurate description of the human condition.

## II. Realizing human cognition in the cross-section of life

*A radical constructivist and action theoretical approach*

### Abstract

Cognitive possibilities are often seen as sprouting from abilities. Furthermore behaviour is getting understood as being rendered by events in a past long gone, but fired up by veiled stimuli in the present. In this contribution the focus will be directed on what is happening in the present moment of time and location. It is actually the only instance an organism exists in. From out this focus the question arises into the operations supporting if not bringing forth the cognitive possibilities mentioned. What operations for instance are needed in order to realize thinking about tomorrow or recalling an event from the past? This already shows the action theoretical approach.

In the contribution to follow three cognitive skills and the effects experienced will be discussed: displacement in space and time or self initiated imagination, being able to gauge the mind of another person and being able not only to reflect but in particular to realize a condition of reflexion. The availability of an object pattern within the framework of mediated manipulation will provide the stepping stone to the mentioned skills.

This contribution comes in three parts. Explaining the aim provides the stepping stone. Elements making up the background making further explanation understandable will be offered under "Perspectives". Further the operations supporting if not allowing self initiated imagination, theory of mind and the ability to reflect on oneself will be discussed. A critical note on the concept of the feature of "an open end or an apparent endless creativity" will round up.

### The aim

Comparing the "tools" used by apes and these by early humans inspired the formulation of a hypothesis present in "The Forgotten Transition".<sup>51</sup> The features thereby summed up provide a stepping stone into the realisation of new abilities or rather, abilities not observable in other animals in particular those most akin. Later publications such as "Objectification as linchpin" and "Beyond the material engagement theory" focus on the trajectory departing from the condition the "human" shared with the species most akin into the realisation of abilities typical for that human. The mentioned contributions focus the process of development, the coming into being.

The present text discusses the same themes but takes another vantage point.

In mainstream thinking the brain seems like a kind of Aladdin's lamp. From the workings of the neural tissue escape abilities transcending the understanding. Take the version offered by Crick and Koch for instance. They suggest that in the brain an oscillation of 40Hz occurs supporting even promoting the origination of consciousness. Suggestions like this often draw the attention to the fact that the human

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<sup>51</sup> Strictly spoken, making reference of "early humans" is a simplification which will not satisfy paleoanthropologists but does in the actual context.

brain diverts from that of other animals in respect of volume, the density of neural tissue and the organization of dedicated clusters. That is then taken to be the source of all kinds of abilities and features only present in the human. That conviction is often accompanied by another already present earlier in historical times. Galileo living in the transition from the 16<sup>th</sup> into the 17<sup>th</sup> century already stressed the importance of the workings of the smallest of constituents active in the deepest of dimensions. Thomas Willis a medic living in the 17<sup>th</sup> century, in turn redirects the attention onto the workings of the brains instead of other organs such as the heart. This fuses into a depiction still dominant to this day: the workings of the smallest of constituents present in the brain tissue. But also other representations gain importance. Galileo's suggestion takes place in a spatial frame: the smallest in the depth. But psychological points of view gaining importance, focus on a time frame, in particular by looking for origins in a past long gone seemingly forgotten.

All these are examples of storylines sustaining if not determining the understanding in a dominant way. It renders a simple, maybe somewhat a caricature: while origins lying in a past exert influence, the brain is the node raising mood and behaviour in the actual moment of time.

The present contribution focuses on the same moment: the human in his factual existence testifying of skills and competences. But the attention will not get directed on origins in times past, neither to the brain as the source from which abilities emerge. The focus will be on action in the public arena open to observation for all present.<sup>52</sup>

This begs the question: what exactly does the human perform in the actual slice of time bringing forth particular abilities and experiences?

This approach justifies the qualification "cross-section" mentioned in the title. It will all be about what is done here and now from an action theoretical point of view as an alternative for the brain-centrism characterising main stream thinking.

## The perspective

Any exposition is finding development from a particular point of view. The traditional approach as well as the more recent cognitive psychology, aims to bring forth a representation depicting reality as truthful as possible.<sup>53</sup> Inspired by Hume Kant convincingly explains that every perception only depicts the way the world appears to the observer whereby the input is getting organized by the structures imposed by the mind. There is no need for a philosopher to reach that conclusion. No one will contest the idea that a product is determined by the instance or contraption bringing it forth. A barrel filled with grapes will not conjure up a coffee grinder. Following the same line of thinking it will be clear that the world of the butterfly will be different from the world of the fish and the latter in turn of that experienced by the human. There is no reason convincing enough to assume some species being able to transcend this kind of embodied determination.

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<sup>52</sup> It should be noted that other approaches too focus on the observable as behaviourism for instance neglecting psychic mood, the famous turbulences in the black box. System theory too falls back on the intersection in which individuals become considered to be active parts in the support of a larger system.

<sup>53</sup> Referring to Watzlawick (1984:15)

In short, any form perceived or broader ‘lived’, is a form brought forth by a particular type of body. Narrowed down to the dimension of cognition, any perspective taken comes from assumptions, sometimes explicit but more than often concealed.

Therefore the first part of this text will be dedicated to clarifying the assumptions taken. It is not only a matter of transparency but it will also help to understand points of view expressed.

This type of screening will consist of three steps, each dealing with more than one theme.

The first step refers to initial circumstances the human must have shared with species most akin, anatomic and physiologic changes which for this explanation will not always be relevant discussed and understood against a phylogenetic and an ontogenetic background.<sup>54</sup>

The second step will elaborate on the character of elements of knowledge. The condition of being and the way it appears or shows itself will become discussed. The presence of virtual objects in thinking will receive attention. Also the character of concepts will be a theme focussing on the difference between variants which could be called authentic and others arising from historical identifiable circumstances. The way the term “ability” has to be understood will also be considered. This part will be rounded up by some remarks on the difference between naive realism and radical constructivism.

The third step focuses on the arena in which the action is executed. The whole will find completion with a question about the function of the brain: is it considered to be a fountain from which abilities gush out or is a general node of which parts over time have specialised into dedicated functions?

## A. Circumstances

### *Remarks to “the initial condition”*

Recall that with the latter is meant these conditions the species which in the end would become human might have shared with other species most akin. What would have been the nature of that? In a way the answer has been given already when referring to biological dynamic, more precisely the condition of the primary motivation driving to actions needed in order to maintain life in the broadest of senses stretching from feeding to finding a partner in order to procreate. This dynamic, this type of never ending alertness translates into a constant tendency to check and master the relation to the fluctuations present in the environment, as one concept ‘relation regulatory behaviour’.

Observe a bird. It leaves the branch of the tree flying to the garden bottom and pecks. The little animal apparently “sees” events which escapes us humans provided with the bodily abilities we have. The bird must have horizon of perception, not to speak of a horizon of existence, different from us, from other species altogether. But there is more. Engaged in the process observed it constantly looks up, showing a continuous condition of vigilance, a condition we as Western people are no longer familiar with.<sup>55</sup> The

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<sup>54</sup> So far more than forty features of difference have been listed between the perceptive cognitive organization of the initial condition and that of the modern human. Cf Supplement to The Forgotten Transition, chapters 1 & 2.

<sup>55</sup> The occurrence of an extremely long period of peace makes a lot of West-European people consider this to be a natural condition while overlooking historical times it is rather exceptional.

relation regulatory stance is the rule, constantly looking for food, constantly on the lookout for eventual disturbances. This is actually the basic tension characterizing any form of life, a factor to keep in mind. The type of and the abilities proper to the body is second factor deserving attention. A body is not something independent of the environment it might seemingly accidentally find itself in. A particular type of body is a function of the environment in the sense that this environment provides the basic condition for the possibility to be existent at all.<sup>56</sup> Consider the presence of oxygen without which not one single breath-taking organism ever could exist, while oxygen is actually a waste product of the process of photo-genesis. That, might be observed, is a process on an enormous scale. But there are also others, on a lower scale. Take grass for instance coming into being around 60.000.000 years ago. Its very existence provoked the whole heard of grazers coming into being. Spores provide another example. While these are getting dispersed by the wind flowers appear relatively recent on the geological time scale and metaphorically spoken seduce insects to distribute pollen.<sup>57</sup>

The body or rather the whole of an organism is a derivate originated within the confinement of chaos present. Its particular form is only a variation within the mentioned confinements. There are a lot of different grazers and myriad types of insects each connecting in its own way with particular features of flowers.

Precisely the form brought forth by the process of evolution mentioned provides a particular way to cope with the burdens of the environmental fluctuations.

So far for a brief and maybe all too simple explanation of the basic condition: primary motivation as a basic drive, the relation regulatory tension and behaviour, the abilities provided by the form or the body of the organism.

These are all quite trivial data. But precisely by being trivial they escape the attention. Moreover the influence of the biblical revelation cannot be underestimated. Man is an exceptional creature brought forth by the divine instance in his own image and whereby all what further is present in nature is destined for human profit. Man is the privileged caretaker for the divine creation. Even the not religious share silently that man is exceptional, not only in the sense of able to exceptional realisations but also in the sense of belonging to very distinct order.

The aim of the present explanation is only to sharpen the awareness of the condition described, of the fact that no creature can escapes these conditions, man being no exception. It is the definite context wherein man as a species - all species for that matter - has to exist. There is no escape to it.

All what seems to transcend this basic condition has to originate from it and come to development within the confinements of it.<sup>58</sup> Man considering himself an apprentice wizard able to thrive outside of these borders errs.

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<sup>56</sup> A similar argumentation can be found in the "Tractatus" by Wittgenstein. It already starts with the very onset. 1. The world is all what is the case (...) 1.1. The world is the totality of facts not of things. (...) In a representation like this is not a set of things but an intertwinement of events in which an event – the fact – is a function of the conditions and circumstances. For Wittgenstein it is all about meaning on the level of language. In the context of the present text it is about biology. The living organism is not something which can be considered detached from its environment encompassing it. The environment determines the condition of becoming alive in the first place, further defines the possible form an organism can take. In that sense bird, beetle and man as possibilities realized from out one basic condition. Taken this way man is not different to the beetle only a different possibility. The difference lies in the fact that the human is the expression by another form and by this provided with different means to negotiate the environment. The seemingly inattentiveness by which human tend to trample beetles and the like surprises. It makes it seem humans are of a different order altogether while humans actually are only instantiations rising from the same pool of possible forms. The Jains by cleaning the path before even trying to put down a foot, however their conviction and motivation is different, testify of the insight that all what is alive originates from the same pool.

<sup>57</sup> Spores around 455 while flowers around 130 million years ago.

<sup>58</sup> Titus Lucretius Carus: that which is born creates the use...

Sceptics rush to mention high technological achievements such as the use of electromagnetic waves or travelling to Mars. But these developments too cannot be realized from any other position than from within the confinements mentioned. Participate in a board meeting we might behave extremely polite, engaging in the dance of being well mannered of strictly disciplined like automated soldiers in a parade, all in the end remain primary motivated investigating any minuscule sign of behaviour which might be relevant for our own well being. On the level of relation regulation there is no moment of idleness.

The same is the case for what concerns embodiment as determining factor. It is not because the human is familiar with his abilities that these can be considered to be absolute and timeless, silently convinced that this has always been the case. It has indeed been the case within the existence of the human as a species, but there has also been a time the species could not yet be recognized fully as being human with a body exposing the form and the abilities it shows today. There has been a phase in which being fully bipedal was not the case yet. A time the ancestor moved around on the floor making use of all fours or sometimes on the hind limbs and alternately lived in the trees like Lucy did. There has been a time that the ancestor moved around nearly exclusively in the treetops.<sup>59</sup>

Given the conditions mentioned the new abilities must have arisen from the interplay between body and environment, the ability to express verbally and to imagine how to organise manipulations in the future, must have been originated so to speak under de pressure of the changes mentioned.<sup>60</sup> Unless becomes accepted that all these abilities emerge from the workings of the brain.

But that is not the path taken here in which the focus is directed on what is observable in the public arena.

This approach does not require a far reaching exercise in fantasy. Animals in relation to the immediate surroundings, actually the only ones which they experience, do not contemplate the circumstances. They act guided by what is at hand. There is no inner instance at work having to answer the inner workings of other creatures. Only what is prone to perception in the arena of public behaviour counts.

That principle can be recognized in the so called "modern synthesis". Selection takes place on the level of the phenotype.<sup>61</sup> Changes in the form of the body or behaviour regardless the cause being genetic or provoked by external factors, they all have to prove survival value in life as a practice.

Obsessed by workings attributed to inner workings, a version with historical roots, the fact that life unfolds in the public scene is getting overlooked.

The initial condition the hominid which in the end would become human provides the stepping stone. But for the hominid line as will be explained further a particular development occurred. However knowledge and behaviour will be at the core it will be stressed that these do not exist in splendid isolation. Any organism is part of a context. Changes in the latter will be of influence on the organism involved. This will be discussed in the following part.

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<sup>59</sup> Cf East side story, by Coppens.

<sup>60</sup> Taken to its extreme consequence this drives to a radical constructivist point of view. In that the – plausible – idea that man is the producer of knowledge. According to Ernst von Glaserfeld radical constructivism is radical because it breaks with the usual held beliefs and it develops a theory whereby knowledge does not reflect an objective ontological reality. (Mentioned in Watzlawick, author and editor; 1984; *The Invention of Reality*. New York, W.W. Norton. P. 24. Observe that Piaget's approach also endorsed constructivism.

<sup>61</sup> Huxley, J.S. (1942); Mayr, E. (1982)

### *Changes do not occur in thin air*

Bipedal locomotion is without any doubt a sign of an ongoing change. Different hypothesis have been suggested in relation to what might have caused it. The coming into being of the isthmus closing the passage between North and South America around five million years ago is one of the theories. Blocking the stream between the Pacific and the Atlantic Ocean would have influenced the climate in parts of Africa in turn responsible for changes in the vegetation.<sup>62</sup> MacWhinney (in Givon, 2002:233) suggests that tectonic tension causing the Rift Valley played an important role. This option is shared by the paleoanthropologist Yves Coppens in what he coins “The East Side Story”. He explains that hominids on either side of the Rift would have developed different life styles. On the one side the hominids remained occupying the treetops, while on the other they became confronted with an advancing savannah. In the latter condition the hominids would have profited from an upright posture hence bipedal gait. All the options mentioned have defenders and opponents, but whatever the option chosen it is plausible to accept that changes in the ecology pushed into a different lifestyle. Considered from a distance a pattern of development comes to light.

The pressure of the changing circumstances provoked a change in life style encompassing bipedalism.<sup>63</sup> The latter changed the perspective on the immediate surroundings. A body resting on all fours has another field of vision than the same body standing upright promoting a view in the distance ahead. But maybe this presentation has to be reversed: the need to look over the low vegetation forced these creatures to adopt an erect posture.<sup>64</sup> Of importance is that in this change the forelimbs and the hands lost the function of support in the gait of knuckle-walking. The hands did not become superfluous as besides a role in moving over the forest floor they also were skilled in grasping branches as part of a life in treetops, holding the offspring and picking fruits. These skills already present seemed to open room allowing further exercise. This has not to be understood in the sense of goal oriented drive – bottom up – but as an opportunity happening, ready at hand, in a way inviting to be exploited. The situation was in a way affordant. This development did not have to happen, it was contingent. The Phalangeridea ancestor of the kangaroo lived in the tree tops and made use of all fours. Here too a development in the direction of bipedalism took place but it did not promote the further use of forelimbs and hands, on the contrary, they receded.

Some apes show skilful way of grasping and manipulation. Nodules are used to support action such as in the case of chimpanzees handling hammer and anvil in the act of breaking the hard shell of nuts. The bonobo on the other hand does not engage in that type of manipulation.<sup>65</sup>

In the long end the execution of particular types of manipulation results into adaptations.<sup>66</sup> Marzke (1992) studied changes in the function of the hand in particular the role of the thumb. Tocheri et al.

<sup>62</sup> Aaron A'dea et al. 2016. Formation of the isthmus of Panama. <https://advances.sciencemag.org>. 2016; 2:e1600883

<sup>63</sup> For recent research, see Killeen & Glenberg (2010) quoting “Changing bodily abilities altered attentional processes and changed the infants interpretation of the world from one dominated by movements to one dominated by goal directed action” (p.72) An important conclusion as a) it refers to “Changing the body or its relation to the environment changes cognition and behaviour” (p.74) and b) this is on par with the idea of a transition from the world one to world two as suggested in *The Forgotten Transition* (Gilbert, 2018). The author also refers to other research such as that of Somerville, Woodward & Needham (2005) also finding that changes in manual skill affect attention (quite relevant for my suggestion on objectification as a perceptual cognitive reorganization. Killeen, P.R. & Glenberg; A.M. Resituating Cognition. Comparative Cognition and Behaviour Reviews. Vol. 4 pp. 66-85.

<sup>64</sup> However elephant grass grows quite high while Australopithecines like Lucy were small.

<sup>65</sup> Cf Bickerton, D. 2009. Adam's tongue.

(2008) published on the development of the hand since the last common ancestor (LCA) of the great ape and the human. But the observations formulated by Almécija and Sherwood in particular draw the attention (2017).<sup>67</sup> They explain that the hand of the chimp developed further in respect of a life to an important degree taking place in the trees, while the hand the hominine which would evolve into the human kept an older form and from there on developed into a form of its own.

But whatever the trajectories taken the pressure exerted by changes on the level of ecology gave rise to changes in behaviour and in turn promoted changes on the level of morphology.<sup>68</sup> The effect described by J.M. Baldwin in 1896 plays. Changes in the ecological niche so he pointed out force behaviour to change too which in the end is becoming translated into a Darwinian selection and in this way to changes on the scale of evolution.

This observation is of importance because behaviour occurring in the public arena is the stepping stone and it is precisely that scene of action which lies at the heart of the present approach. Moreover maybe superfluous, two mechanisms driving evolution are getting exposed. On the one hand mistakes in copying on the level of genetics can result in changes in morphology, changes which have to prove viability in real life situations.<sup>69</sup> On the other hand it makes clear that behaviour originating by changes in the environment can exert pressure on the mechanism of selection.

The conviction of the importance of the hands is not new.

In the 5<sup>th</sup> century BCE Anaxagoras concluded that man was intelligent by the use of hands.<sup>70</sup> A century later, Aristotle observed that hands promoted thinking and that they were the instrument pre-eminently because they allowed the making of tools. Much later again, in the 16<sup>th</sup> century, a French poet Pierre de Ronsard argued that precisely the hands made the species human. In that same century Giordano Bruno attributed the grandeur of man to the hands not only because they allowed the making of tools as Aristotle already observed but also they brought forth knowledge. Rounding up these illustrations, the term chirurgia – whence “surgeon” – originates from the observation of the abilities of the hands, an observation laying the foundation for the systematised study of anatomy.<sup>71</sup>

In an earlier publication I have stressed the importance of the abilities and the system going with handling, this as the primordial condition for the type of knowledge typical for the human.<sup>72</sup>

There is yet another change of importance in the region of the breast and the muscles involved in breathe. That fits the introduction of speech in need for a constant flow of air in order to produce a long sequence of sounds in an orderly manner. The position taken by the cognitive scientist Philip Lieberman

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<sup>66</sup> This idea is far reaching. Noble and Davidson observe that execution in the long run recruits structures in the brain rather than that the practice would be dictated by the brain. (1996:226) Similar ideas can be found in Merzenich et al. (1983) and in Rossini et al. (1994).

<sup>67</sup> In Kaas, 2017:300.

<sup>68</sup> This could actually be formulated in a present tense as the changes are still ongoing.

<sup>69</sup> As explained by Hugo de Vries in “Die mutationstheorie” (1901). He was also the scholar who brought the findings published earlier by Mendel but lost in oblivion under the attention.

<sup>70</sup> Many centuries later Leonardo da Vinci claimed the contrary: because man was clever he made far reaching use of his hands.

<sup>71</sup> This, against the background of mechanistic model inspired by Galileo in which cause and effect lie at the core. This has to be considered groundbreaking because the human body was considered a gift from God hence untouchable. With the practice mentioned investigation as if it was a mechanic took place. Concerning the term chirurgia, it goes back on the Greek “kheirourgia” with “kheir” or hand as root and ergon referring to an action performed.

<sup>72</sup> Gilbert, J.F.R. *To the bare bone, the role of the hand for human cognition*. Supplement to The Forgotten Transition, chapter 14.

is subject of dispute.<sup>73</sup> He suggests that in the evolution changes occurred in the position of the larynx thus facilitating the production of sounds. The paleoanthropologist L.C. Aiello (1996) assumes that lowering of the larynx followed bipedalism in time.

For us it is only of importance to point out that changes had taken place. What has been mentioned are all examples of changes on the level of morphology, adaptations at least potentially present in modern newborns. But not all adaptations are of relevance for the features considered human subject for further discussion.<sup>74</sup>

### *Relevant adaptations*

The upright position changed the position of the intestines. In locomotion supported by all fours the guts are supported by the peritoneum and finally by the skin. Giving birth, the foetus is getting squeezed out in a more or less straight direction facilitated by the form of the pelvis. These are features which have undergone profound anatomical changes. The laborious process of giving birth testifies that not all adaptations necessarily should be considered advantageous but rather a new type of cost. Walking upright led to changes to the pelvis whereby the foetus from then on has to realize a tilt because the opening is no longer positioned in a straight line with the womb.

Walking upright also changed the form of the foot. The big toe showing a sideways position similar to the thumb in order to facilitate the grasping of branches gradually repositioned in line with the other toes. The research directed by Campbell Rolian of the University of Calgary testified that this had consequences for the development of the hand.<sup>75</sup> Based on precise measurements and mathematical models the researchers conclude that changes to the foot coevolved with changes of the hand. In what sense this was of importance for the already existing technique of grasping is not quite clear.

Summarizing, not all adaptations of the morphology of the body are conditions promoting typical human competences like the seemingly unavoidable perspective of aboutness. Bipedalism however must have been of influence on the freeing of hands by this opening a range of possibilities to further playful experimentation on the level of manipulation in turn the stepping stone for new forms of cognition based on mediated manipulation.

There are different ways of ordering adaptations, sequencing them as they developed over time for one, the so called phylogenies. But it is also possible to distinguish authentic from alleged adaptations and furthermore from phylogeny to ontogeny to execution.

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<sup>73</sup> He is a cognitive scientist affiliated to the University of Brown, Rhode Island, not to be confused with Alvin Lieberman who developed a theory of speech based on motor abilities, considered language to be native thereby moving in the direction taken by Chomsky (the latter not in the version of the minimal program).

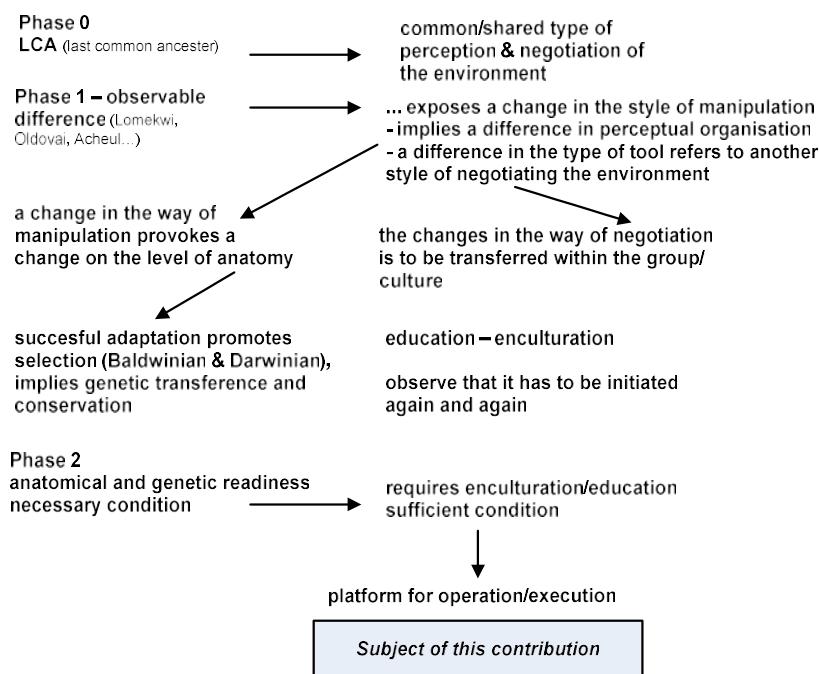
<sup>74</sup> Strictly spoken the difficulties in giving birth are also typical for the human species, but it will be evident that these are not the features meant here.

<sup>75</sup> Rolian et al. 2010. The co-evolution of hand and feet. *Evolution* 64:6; 1558-1568.

### *Development and adaptation, schematic presentation*

Adaptation presupposes development. For the present subject this can be presented as a change following three tracks: ecological circumstances, biological and technical characteristics. This distinction is artificial and only serves explanation.

The ecological dimension providing the circumstances exerting pressure in the direction of change will be left out of the discussion because however causal it does not add to the insight on the development of cognition.



#### Phase 0

This covers the period between seven to six million of years back, the point where great apes and the branch which in the end would produce the human diverts. There is at this point in time no reason whatsoever to assume a difference in cognitive abilities. Motives giving direction to behaviour, moods, forms of imagination and the organisation of perceptual input must have been similar. This marks the initial condition.<sup>76</sup>

#### Phase 1

Stone implements showing signs of adaptation testify that some hominines engaged in a different manner of negotiating the Umwelt.<sup>77</sup> The earliest, found in Lomekwi date from 3.300.000 years back in

<sup>76</sup> This has been discussed at large in The Forgotten Transition, 2018; chapter 2 sub 1.1.1. and more elaborate in The Supplement, chapters 1 & 2.

<sup>77</sup> Hominines refers to humanlike species encompassing four large families: australopithecine, paranthropus, ardipithecus and the homo group. The term Umwelt had been introduced by the German biologist Jacob von Uexküll referring to that volume in the environment defined by the reach of the senses and the motor abilities. The recognition of the nodules showing sign of adaptation to be tools is quite recent. It started with the collection of Jacques Boucher de Crèvecœur de Perthes around the year 1826, but the idea and recognition of being stone tools dating from the paleolithicum only got accepted in 1859.

time. These become followed by the more commonly known Olduvai types date around 2.500.000. There is some discussion over the fact if these findings are really special. Some, T. Wynn for example, does not discern features testifying a decisive distinction. But on the Acheul types, with 1.600.000 years nearly a million years younger, there can no longer be any form of doubt. These types do not appear in use by any other species. The form appears in many different places and in some in large numbers. This feature which is observable in the public arena shows standardization. But that what is observable to all must also have a dimension which is not. The way of manipulation going with perceptive cognitive processes bringing forth that observable type of artefact must have been subject to changes too. More generally spoken, there must have been a change in the way the environment got negotiated. This conclusion is unavoidable.

Noble and Davidson suggesting that practices recuperate structures in the neural tissue have already been mentioned. This idea can be taken further. A sustained practice will over time change the shape of the body. This is a trivial fact easy to observe directly in the world of sportsman.

For the actual context this idea suggests a global development. Changes in ecology promote a change in posture in turn facilitating a change in behaviour in the long end translating in changes in the form of the foot, the legs, the pelvis, the spinal column, even a shift in the position of the foramen.<sup>78</sup> But that is only one dimension. The other is that the behaviour underlying these changes is getting transferred to conspecifics. At this point there is something remarkable needing to be stressed. While changes in anatomy follow from a process of natural selection in the end translated in genetic makeup providing a predisposition, the practice by which it all starts has to be executed and transferred again and again. It does not come by itself. The changes in anatomy are the necessary condition. But the effective execution on the other hand only becomes possible after a process of enculturation or education. That is the sufficient condition which has to find implementation on the lifestyle of every new member of the group.<sup>79</sup>

## Phase 2

The above allows two mention a development following two tracks. On the one hand there is the biological resulting in a predisposition of readiness bearing the character of a necessary condition, a cultural development which has to be implemented again and again in order to make an ability to become a real practicality.<sup>80</sup> The latter bears the character of a sufficient condition. Example: without the changes of the hand following from continuous practice the human hand would never have been able to develop into a range of different forms of grasping.<sup>81</sup>

All this is of course a simplification but it provides an indication about the development having taken place.

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<sup>78</sup> This is the opening at the back of the skull where the spinal cord and vertebrae enter. In the knuckle-walking ape leaning forward the foramen is positioned in an angle of about 135 degrees to the backside. In the human it is pointing straight downwards (180°) allowing the vertical uprising spinal column entering the skull. This is actually one of the features allowing to recognize bipedalism in fossil findings.

<sup>79</sup> Who is familiar with the concept of "Lebensform" introduced by Wittgenstein, this is the imposition of the Lebensform at the lowest level thinkable.

<sup>80</sup> Readiness is positioned on the side of the actor and refers to be prepared to engage in some action while Zuhandenheit (Heidegger) or affordance (Gibson) is the condition of the situation "inviting" some action. Take a pen (Heidegger) inviting to engage in writing.

<sup>81</sup> Reference to the already given footnote on the work of Elisabeth Marzke.

### Phase3

The phenotype or the morphology is present while the social context took care of the effective execution. That occurs in what could be discerned as the third phase resulting into effects said to be unique to the human. For instance with the infrastructure available how can speech be produced? How can speech be instrumental to communication? How is the human able to reflect upon some subject, a step further to reflect upon oneself? Questions of this type lay at the heart of this contribution. The focus will not be directed on potencies ready when rubbed to bring forth all kinds of seemingly magical realisations, neither on accidents happened in a past long gone but allegedly causing effects in the actuality. The focus will be directed on the execution of behaviour taking place in the crossing of the actual moment in the arena which lying open for all to see.

Summarized:

Phase 0: no difference on the level of cognition

Phase 1: tools unearthed indicate changes in behaviour, in negotiating the Umwelt

Phase 2: anatomic readiness as necessary condition provides the breeding ground allowing to bring abilities to expression through practice; these are the two sides of a coin

Phase 3: the execution itself, the core of this exposition

The paleoanthropologist Yves Coppens observes that the biological evolution has been dominant over a period of 2.300.000 years and that the technical development only took over since 100.000 years. Without reservation it might be added that the last 200 years in particular testify of an exponential change.

### *From phylo- to ontogenesis and to execution*

There is yet another way to make a distinction.

#### 1. Phylogenetic

This refers to phenotypic or phenomenal appearances testifying of readiness which occurred by the pressure exerted by ecologic changes. It is about the transition from an incorporated operation sustained by the use of means in the direction of a technical activity apparently detached from the body.<sup>82</sup> This resulted into another way of existence, another way to negotiate the Umwelt. Objectification and taking a perspective of distance allowing consideration are features characterizing the human way of being, instantiating the human condition.

#### 2. Ontogenetic

Every newborn is in a condition of readiness. He disposes of anatomic adaptations brought to expression by education, broader 'enculturation'. On the one hand there is the availability of the form and motor capacities and on the other the need for external intervention to allow executing the acts necessary to express the capacities mentioned.

<sup>82</sup> If a tool seems to be incorporated it feels like being part of the body. The term got introduced by the German biologist Helmut Köhler. The hammer-stone used by a chimpanzee is not an instrument or a tool standing on its own. It is part of the dynamic of grasping, holding and hammering. Think of the act of writing becoming an automatic activity. One does not hold a pen in isolation in order to produce graphemes, one writes. The pen became incorporated.

### 3. The execution

The final question is: given the acquired and learned abilities what are the operations to be executed in order to render the type of experience esteemed to be typical for the human?

#### **B. Explaining and understanding**

##### *Being and the way it is getting exposed*

What is the very first moment in experience like? Waking up and opening the eyes finding the world there in front immediately cloaked in a never ending stream of comment. That is the manifestation of the so called human condition.

A world showing itself *over there* - expressing a distance - as a scene, actually as an object because it is the object given a name, a type of manipulation. It means that the scene takes the form of an object prone to manipulation. The tree perceived is situated there on a distance. It is some thing, a scene attributed a name. It can become an object of representation: what would it be if there was no tree over there, or if the tree was higher or planted in another location... This might seem to be ideal proceedings; in the end will become clear they are not.<sup>83</sup>

This simple scene composed by perception, naming and representing is based on the execution of action, of manipulation.

More generally, there is biology, there are tensions, moods and motives experienced and there is the activity of perception of some thing – there in front – accompanied by description. We perceive some thing over *there* at the same time naming and describing it. This can only be presented a double layered – language forces it that form – however it seems only one gesture, one move. It suggests a being alive as condition *and* the naming or interpretation of it. It suggests a double layering. But think for a moment of a vase. It cannot exist without the matter of which it is made but neither without the form characterizing it. In the same line of thought: there is being and the interpretation of it. One cannot be thought without the other.

The distinction only exists by and in the analytic way of thinking.

Because being and naming-describing-interpretation is the only mode man experiences in a direct and unavoidable way, it may rightfully be coined ‘a lived experience’. It deserves extra stress: this is the only condition experienced. Following Husserl: the world shows itself in first instance and exclusively in consciousness. It is a condition impossible to escape.<sup>84</sup>

Thought can neither be avoided. But these are only the products of the inescapable act of thinking. However the content of thought comes down to the manipulation of imaginative contents and these can be interchanged. Being conscious cannot be avoided however the content is prone to change.<sup>85</sup>

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<sup>83</sup> “Ideal” in the sense taken by Plato mentioning “ideas”.

<sup>84</sup> This is an important observation in regard to expectations provoked by some gurus promoting particular meditative techniques. As a human being, by this referring to the characteristic of irreversibility, it is impossible to escape the human condition into a kind of so called enlightenment. The latter thought is quite ironically itself a product of the human condition. (On irreversibility, The Forgotten Transition, chapter 2.I.1.3)

<sup>85</sup> Man is doomed to bring forth storylines; he is to a degree free to adopt the story of his liking. “Free” has to be understood in a relative sense, this freedom is not absolute.

An example of a content as mentioned is the idea about the initial situation shared by great apes akin and the line which would in the end bring forth the human species. Such content can only be thought, only be presented in imagination. But on closer inspection doing this is a weird practice coming down to imagine what it would be if man was not able to imagine – as this is the case in that initial situation. Precisely the latter case is the stepping stone leading to the final result that is occurring in the ability to present some content in the imagination. It comes down to imagine what is would have been like to lack that ability. Playing with words it comes down to imagine the inability to imagine and from this as starting position to imagine what it is like to bring forth an imaginative content.

In summary there is the mode of being and the interpretation of that condition, being and the way that can be explained or understood. However both collapse into one being, always manifests in a particular way allowing the observer able to consider to make a distinction between for instance a condition of homeostasis being disturbed and the way that is getting explained. While being is the motor the way of interpreting or understanding it will guide behaviour according to the way the understanding frames the instance of being.

This might all seem somewhat vague. The further explanations will clarify the perspective presented.

### *Virtual objects*

Franz Brentano had two important students. One, Husserl focussed on the phenomenon and became well known. The other, Von Meinong, did not share an equal public attention. In his publication of 1904 "Über Gegenstandstheorie", he discusses the statute or the character of the objects referred to. He distinguishes for instance "the kitchen table takes a lot of room" from "mountains of gold are getting promised". The statute on the level of the ontology is that the kitchen table exists in a tangible form; it can be perceived and handled which is not possible with "mountains of gold". This easy to understand distinction paves the way to further explanation.

If the question if golden mountains really exist would be answered in all seriousness by someone then that would probably raise amazement. Who for God's sake could take that question seriously? But once outside that context in the sphere of common parlance expressions like these (golden mountains) seem to get accepted as things really existing in the world.

Reference is getting made to the mental, to duality, the mind and in one and the same move also the body in exactly the same way as is spoken about banknotes in the wallet, the bicycle stalled, the dog on the other side of the road. On the level of common parlance it does not hinder. But in a discussion between scholars trying to get grip on phenomena such as mental capabilities then the distinction and the awareness that it concerns virtual units is absolutely necessary.

### *The concept of "concept"*

A concept is considered being a building block in the act of thinking. It is therefore not surprising that an extensive literature on the subject exists. The aim here is only to point to a remarkable characteristic.

Different points of view are possible. One is related to the framework of knowledge. According to scholastics, an orientation originating from the 12<sup>th</sup> century with branches until the 18<sup>th</sup>, reality could be understood in different ways. One group was convinced that particular units existed. Here was one tree

and there another and further another again and so on. Features recognizable in all those particular trees allowed the attribution of a label and consequently distinction from the same type of label but referring to features recognizable in other particular things such as flowers. This group is known as the nominalists reflecting an interest in a classification of features rather than it would indicate what really was present in the world.<sup>86</sup> The realists as another group held a different opinion. Take Plato as illustration for this position. Ideas are the real thing; particulars present but a scant shadow of it.

There is yet another more recent approach following a more psychological track inspired by linguists. In that perception is organized along the lines unveiled by Gestalt psychology. On the lowest of levels the scheme of part-whole configuration organizes input into meaningful phenomena. When coining the word “car” for instance not a specific model or a specific function such as ambulance or fire truck is coming to mind, but a stylized pattern, something container like provided with wheels suggesting mobility. This pattern is known as a basic level category organizing perception.<sup>87</sup>

Nominalism, realism and basic level categories, which of these finds application in daily life? It will be obvious that in day to day circumstances no one considers if a perception is related to a particular instance (nominalism) or merely would be a shadow of an idea that occurs somewhere in the world (realism).<sup>88</sup> In real life situations the use of basic level categories seems to be more natural. This is a human, a pen, a car, an animal and so on. However these bear the character of general rather vague formulations, without hesitation they are taken as if these would stand for real tangible items. When pronouncing “there stands a human” this does not produce of hinting in the direction of a vague scheme but to some unity really existing.<sup>89</sup> This way of approaching the world is one of the most important building blocks in the understanding of the world.<sup>90</sup>

The importance of this part is to stress that the understanding of the world falls back to an important degree on schemes as sketched out which, it should get stressed, are indeed no more than schemes and not in any way tangible particulars.

As a final remark concepts can be discerned on the basis of the statute obtained. On the one hand there is an essentialist perspective taking a concept as referring to something really existing, think of the concept of mind considered really to exist. On the other hand there is the approached coined instrumentalism. In that case the concept is no more than a label allowing a cluster of features to get discussed. In the latter case the concept “mind” merely is a label covering features or an experience not yet understood.

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<sup>86</sup> There is a slightly different approach explaining that universals exist in the individual entities and that by abstraction they can be isolated. Cf conceptualism defended by Pierre Abelard (1079-1142)

<sup>87</sup> For an informative elaboration on this subject cf Lakoff, 1987, the first part in particular.

<sup>88</sup> It is important to realize that these options are situational and not absolute. At dinner a chemist will not ask for NaCl but for salt just as any other of his table companions would do, a quite different situation than he would do in a lab.

<sup>89</sup> An approach of that type is by Hobbes called “nunc stans”, by Merleau-Ponty “la foi perceptive”, “Urglaube” by Husserl sometimes also “Urdoxa” and by Gehlen “das Paradis von reinen Mittelbarkeit”.

<sup>90</sup> It is tempting to attribute and restrict this practice to everyday circumstances but on closer inspection it occurs as well in the scientific community.

### *Abilities, source or application?*

Ability is yet another term more than often used without any form of reservation but which on closer inspection is quite problematic. It refers to the idea that humans possess of innate mental abilities however distributed over the population in different degrees. Some people are blessed with an exceptional ability to make music or practice math or it is sometimes said that someone is exceptionally apt in language, statements shrouded in a whiff of phrenology. That theory got introduced by Franz Gall in the transition from the 18<sup>th</sup> into the 19<sup>th</sup> century. Adepts claimed able to identify particular abilities through skilful palpation of the skull. It will not surprise that this theory evaporated in oblivion. Vagarious the suggestion remains that humans are provided with abilities as perception, memory, language, intuition and free will. Moreover in line with phrenology it is still accepted that some possess a better developed ability in a particular field than others.<sup>91</sup>

Leaving aside a discussion on heredity, what is actually going on?

An ability being innate falls outside the scope of observation and consequently is impossible to get discussed.<sup>92</sup> But other aspects are. One is about abilities being innate an idea already expressed by Aristotle. On closer inspection this is a cultural transferred view bearing the character of self-evidence. Another idea is about different handlings getting considered as one coherent cluster such as is the case with playing the piano. Grouping different perceptual scenes is a first step receiving further in the appreciation a far reaching meaning: the cluster is becoming considered as one single function: playing the piano. At this point a concept as discussed earlier becomes installed. The fact of importance is that the concept acquires and expresses a statute exceeding the factual act consisting in the execution of distinguishable manipulations. Playing the piano becomes more than a set of separate skills. A step further is the player being submitted to a PET-scan demonstrating a correlation between the act of playing the instrument and activities in particular brain regions. At this point often something weird takes place. While most of the neural researchers involved will when asked explicit recognize that this phenomenon refers to a correlation, the expression used in common parlance will tend to suggest a causal relation.

In short, it all starts with the observation of manipulations in the end getting interpreted as a function causally related to the workings of the brain.<sup>93</sup>

“Working memory” as a concept provides another example. Publications quite cautiously speak in terms of “it appears that... it is not localized in a particular region... mentioning is made of an emergent property” (Buchsbaum, 2016).<sup>94</sup> “Emergent” should be stressed because it also refers to an effect suggested to be brought forth by the workings of the brain consequently bearing the character of a correlation. For matters of clarity the effects experienced and the workings of the brain always go together but this does not allow the conclusion that one is bringing forth the other. D’Esposito (2007) even goes so far in arguing that working memory cannot get considered to be one unity neither a dedicated function.<sup>95</sup> The model suggesting some instance like a working memory originates from a

<sup>91</sup> Thomas Reid, an 18th century philosopher, distinguished forty-three different abilities or competences. At the time philosophy of nature came down to what today is taken to be science.

<sup>92</sup> Referring to the research of John Lorber, paediatric at Sheffield University, on a brilliant student in math (IQ of 126). Cat-scanning however unveiled that the student in question nearly had no brain at all apart of a layer of 1 mm covering the top of the spinal cord.

<sup>93</sup> Playing the piano has been the example but it could as well have been about language.

<sup>94</sup> Bradley, R. Buchsbaum, in Neurobiology of Language, 69.4 The emergence of the concept of working memory.

<sup>95</sup> D’Esposito, M. 2007. From cognitive to neural models of working memory. Phil. Trans. R. Soc. 362, 761-772.

publication of Baddeley.<sup>96</sup> At this point a quote from Hawking in cooperation with Wlodimow becomes relevant. They accept a model coined dependent realism accompanied by a set of rules allowing to relate the said model to observations.<sup>97</sup> That is exactly what I have in mind: observations allow building a model.<sup>98</sup> The reference made to Hawking is not accidental as he is deemed to belong to the absolute top of theoretical science.<sup>99</sup>

A similar pattern occurs in relation to the appreciation of language. According to Descartes it is an ability – an ability again – given by God allowing man to think rationally. But this begs the question: what exactly can be observed? It is about the human moving the region of the mouth and the hands. With the mouth sounds are produced provoking understanding and reaction in the other. It is often overlooked that this effect not only occurs in the other as recipient but also in the actor himself.<sup>100</sup> Language as a function is getting presented as a historical heritage; it is a gift from God and as such innate. This very idea got rephrased in a secular version by Chomsky in the middle of the previous century. Reacting onto a ruling behaviourism he drew the attention to what he called “the poverty of the stimulus”. He observed that children seemingly all too easily mastered language from this deducing the insight that a competence for language must have an innate basis. But here too observation of the operations could have contributed to clarification. Alas for decades the focus got directed on transformational generative grammar while at the same time the endeavour to discover neural correlates neither proved to be successful. Indeed Wernicke and Broca are neural regions involved in language but these do not bring forth the generative task. I have once read about a French linguist who taken by the hype around Chomsky’s ideas dedicated the whole of his career to this project, looking for something which in the end could not be found and in my opinion neither ever was. After all what is left of the whole idea in the Minimal Program presented in 2002 by Chomsky, Hauser and Fitch? The anthropologist Tim Ingold ponders the question – rather rhetorically – if the suggestion about the existence of such a competence is not following from an all too inward directed focus looking for an built-in competence for language, at least in the guise of a LAD (language acquisition device) a suggestion presented by the already mentioned Chomsky in the sixties of the past century? The assumption that some instance as “language” (really) exists does not allow to accept it as a natural occurring phenomena.<sup>101</sup> The very idea of such an instance fits or follows from the Western appreciation in relation to the nature of man whereby functions of the body are distinguished from mental functions, whereby the body is considered a container for an inner life.<sup>102</sup>

The theory formulated by Freud provides another example. He observes that in healthy and in sick people mental processes occur which only can be explained by supposing other acts escaping consciousness hence unconscious processes have to be on play.<sup>103</sup> Here too what originally was no more than an assumption gradually took the form of a concept referring to some instance really existing. As the concept is a building block in the act of understanding the world as a phenomenon, the concept referring to an ability takes a similar function.

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<sup>96</sup> A model proposed by Baddeley and Graham Hitch (1974), both British psychologists.

<sup>97</sup> The Grand Design, 2010.

<sup>98</sup> Further under sub “Radical constructivism”.

<sup>99</sup> Admitted, the argumentum ad hominem is used quite opportunistically here.

<sup>100</sup> Recall Vygotsky who in Thought and Language clarifies that endophasy only follows after having mastered to speak.

<sup>101</sup> Language here is taken as an intransitive instance allowing to bring forth linguistic expressions.

<sup>102</sup> Paraphrasing Ingold, T. 2000. The perception of the environment.

<sup>103</sup> Freud, S. *The standard edition of the complete psychological works of Sigmund Freud*. (J. Strachey, ed.) Macmillan (p. 2991).

Vico (1710) provides a nice quote to conclude this subject. “If our senses are faculties, i.e. productive agents then from this follows that the quality of objects are our products.” The term faculty is akin to the term fact coming from the Latin “factum” or that what has been brought forth. This stresses the execution bringing forth an effect and by this coincides with the approach suggested in this text.

### *Knowledge, technique and theory*

#### **Knowledge**

In the previous paragraphs the concept of “concept” has been discussed in a general sense. As soon as features are getting selected and brought together into a unity a concept comes into being. Focus on a human, select the way he is moving around, upright position supported by the hind limbs, and the concept of walking as something seemingly existing and prone for discussion in its own right comes into being. “Walking” presents itself as an item available for discussion.

The same is taking place when talking about knowledge. It appears as an instance existing in its own right, moreover emerging from a dedicated organ. In the case knowledge is becoming discussed it – as in the example of walking – starts with a selection of features. The concept of minimal cognition facilitates clarification.<sup>104</sup> This approach respects the idea of continuity amongst species. In that sense, the human at - least in the earliest stages - is considered to partake in the same development as the species most akin. In a nutshell it comes down to the development of strategies favourable for the satisfaction of the primary needs.<sup>105</sup> They show behaviour serving metabolism, support the finding of a mate to bring forth offspring and avoiding harmful situations.<sup>106</sup> Observe that this very description already expresses a certain selection of features accommodating these under the umbrella term of ‘minimal cognition’. Cutting corners, this is the basic condition present in and shared by all living creatures, a condition instantiating a dimension of being alive which could be understood as cognition. The human however shows features transcending this basic layer. Layer is to be taken for an indication only and in no way as something on its own. This needs nuance. The extra dimension is based on the dynamics or the system of mediated manipulation part of the development also giving rise to the perceptive cognitive organisation which in the end would become called “object”.<sup>107</sup> This indeed implies that in this approach objects are not considered being things existing in nature but are orderings of stimuli in function of

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<sup>104</sup> Van Duijn et al. 2006; Keijzer, F. 2014; Lyon, P. 2005. From a different angle but quite relevant for the subject is the research executed by dr. Audry Dussutour on Physarum Polycephalum, a one celled creature looking like a mould but isn't one, able to perceive and to move. Also the work of Stefano Mancuso on plant behaviour unveils spectacular findings. It all leads to questioning the concept of cognition commonly used.

<sup>105</sup> As a matter of fact it is a characteristic which lies at the core of all living species, from mold to complex multicellular organisms, cold or warm blooded. (for the lowest level see the incredible achievements of the one-celled physarum polycephalon). On the level of the factual it defines what life is. The human idea of cognition focuses on a very narrow part of this endeavour, on a very special way of realising the achievements mentioned while humans, quite wrongly consider their way of coping with the burdens coming towards them as cognition exclusively. The bias reaches a pinnacle in the human looking back considering his way of dealing with it as the yardstick to evaluated all other modes of performing strategies which could be named cognition.

<sup>106</sup> The Latin sapientia refers to act of knowing. Think of the homo sapiens as the knowing man. Remarkable detail: sapiens is related to “savour” or smelling. Smell is the basic sense triggering evaluation of what is smelled by the limbic system.

<sup>107</sup> For an elaboration on this, Gilbert, J. 2018, The Forgotten Transition.

manipulation.<sup>108</sup> It should not be considered as a separate layer as it in first instance comes down to a transformation of minimal cognition and as such – putting aside the character of sophistication – is actually a continuation of the basic layer or mode. But it has to be admitted, it brings forth products and effects in which minimal cognition is hard to recognize.

The goal of this part is to stress that what is commonly recognized as knowledge is not to be taken for an instance existing in its own right but as a selection of features. It is necessary to realize that this selection is made by an observer bearing a particular – historic – perspective which functions as a filter hence the selection.

One should not look for an instance standing on its own waiting to be discovered. It is always about descriptions made from a certain perspective.

## Technique and theory

Technique and theory are concepts originated against a particular culture historic background.

In what is known of Xhenophonos, a contemporary of Plato, there is no distinction yet between episteme standing for theoretical knowledge and techne as a skill based in practice.<sup>109</sup> That distinction only comes later and then gradually. In first instance, “epistemai” referred to the explanation given by a medic in order to provoke the cooperation of his patient. As such “epistethai” is related to the way things have to be done. It is a practical enterprise including care, caution and knowledge. It is a knowing how collapsing with practice.<sup>110</sup>

Plato’s contribution in particular by opposing an ethereal realm of ideas to flawed shadows raised by the senses, caused an atmosphere of glorification radiating into the appreciation knowledge still enjoys to this day.

The aim of these short depictions is to disembarass some concepts of the self evident character they seem to have, reducing their meaning to biological and culture historic backgrounds. As such they should no longer be taken to be natural in kind but constructs originating from particular points of view. That of course does not eliminate their very existence and the effects following from it, but it does eliminate the apparent need to look for it as if it were subjects really existing somewhere as for instance the search for consciousness and the mental....

### *Authentic features versus concepts with a historical background, a remarkable distinction*

On most cases particularities characterizing the human are getting listed without making any form of distinction. The mental, consciousness and qualia are presented next to the ability to transfer

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<sup>108</sup> Cf Wertheimer, 1923. Untersuchungen zur Lehre von der Gestalt. *Psychologische Forshung*, 4, 301-350. Cf the case of Mike May mentioned by Huber et al. 2015; and a similar case described by Ackroyd, Humphrey and Warrington (1974). More general Gordon, I. *Theories of visual perception*, Psychology Press. Also Gilbert, J.F.R, The object in developmental psychology, chapter 3 in Supplement to The Forgotten Transition (ebook).

<sup>109</sup> For an enlightening elaboration of the subject: Parry in the Stanford Encyclopedia of Philosophy, under “Episteme and Techne”.

<sup>110</sup> For this subject: Gilbert, J. Paralipomena, chapter 119 “Techniek”.

information with a predicative character or the ability to reflect. As if all characteristics belong to the same order.

A distinction is however possible. It can be made between features considered to be authentic and others deriving meaning from a particular historic context. In the perspective of getting grasp on a phenomenon the importance of this type of distinction cannot become underestimated.

Take the concept of “cloud-computing” as an illustration based on analogy. A user who is not familiar with the digital environment will probably not be aware of the fact that the concept is a metaphor. Confronted with the meaning taken literally “computing in the clouds” will come to him as a mystery while he, at the same time will be confronted with the effects of it (by for instance saving photos in the iCloud for later retrieval). For the adept however digital data take the form of bursts of electricity transported over wires and also by electro-magnetic waves, processed and saved on drives of tangible computers in data-centres really existing somewhere in the world. Quite similarly explanations such as mind and inner life also function as metaphors, in this case originating under the conditions and understandings of a particular historic period. And in the same sense computing in the cloud is difficult to grasp, the workings of the mind and the turbulences of the inner moods are equally of not more difficult to manage. This is the reason why the distinction mentioned has to be made.

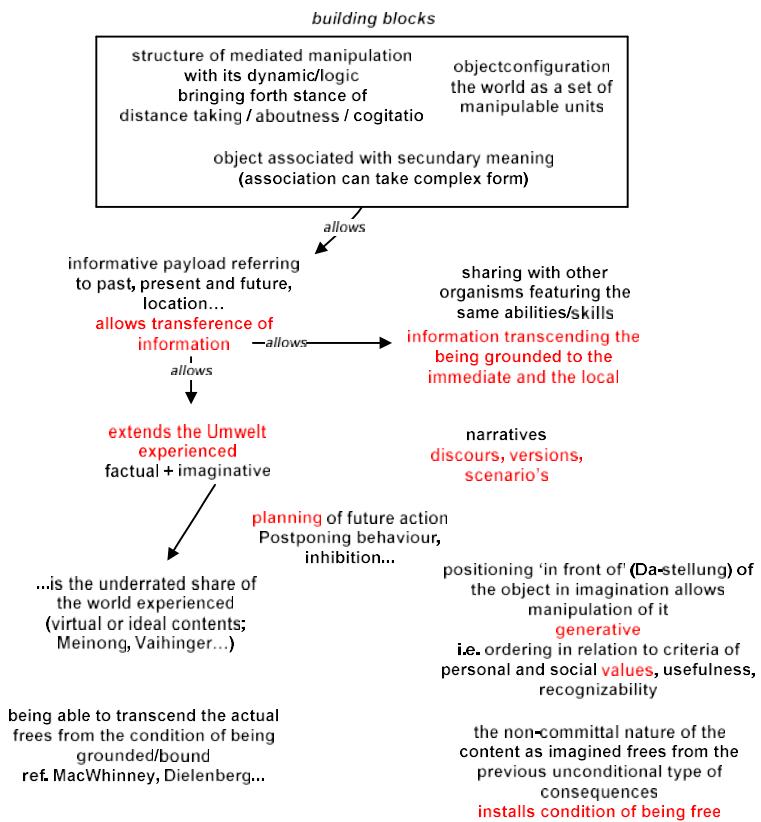
### **Authentic features**

There are features following directly from the development, moreover installing even instantiating development itself. To be clear, there is not a development with such and such features as a by-product, it are exactly these features becoming what will be called development.<sup>111</sup> This for instance may refer to perceiving the environment as a set of manipulable units (instead of dynamic events), on perceiving the world as a seamless mixing of perception and imagination...

Ordered in a scheme:

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<sup>111</sup> This different way of formulation risks to become discarded as being of no importance. But the way of formulating incorporates a particular historic point of view. The wording sketching a particular development as a by-product implies on the one hand an essence of which the form changes over time (stress on essence as a Greek idea) and on the other hand a system suggesting a cause and effect mechanism (Galileo). The formulation chosen here wants to stress being, the ontic dimension.



## Concepts with a historic provenance

There are also other features considered typical human such as mind and consequently also body, dualism, consciousness, privileged access, qualia and the like.<sup>112</sup> From technical point of view these are historical based concepts implemented on real occurring abilities. It comes down to the fact that features and experiences, some of these mentioned in the previous part and considered authentic, from out a particular historical context received a particular meaning. For the Greeks the term “psyche” for example referred to a rather material conception of life taking the form of blood for instance. Gradually the meaning shifts in the direction of “soul” having the character of an ethereal substance. “Pneuma” provides another example. It refers to a moving air, wind-like in the same sense “spiritus” referred to breathing. In the end it took the meaning of “mind” we are familiar with to this day.<sup>113</sup>

<sup>112</sup> Mind is more than often considered to be a problematic subject while body is not. They are however both the same type of concepts moreover that of mind in a semantic tension precisely calling that of body as the collection of tangible aspects falling out of the sphere of the mind.

<sup>113</sup> For a more elaborate discussion, Gilbert, J. Unveiling the mind, chapter 2, part 2 in particular. Sources on shifts in meaning in the period mentioned: Snell, Onians, Bremmer, Cromer, Von Fritz, G. Lloyd, Clagett; last but not least prof. Emeritus H. De Ley (UGent) but also Nietzsche and Heidegger stress the importance of this period for the understanding of the original meanings of the terms concerned.

As said mentioning this distinction holds more than a just so reference. This is certainly the case for a subject like "mind" and "mental".

On the one hand there are features like endophasy, the endless commenting inner voice. It has been approached by Vygotsky as a series of actions or operations to be understood in a not problematic manner (Vygotsky, 1986/1996). But also qualia are getting mentioned referring for example to the experience of undergoing a sunset transcending perception in an inexplicable way.<sup>114</sup>

In case elements of that kind are in one and the same move accepted with elements of a different kind in the same research project, then this comes down to begging for problems. Different types of elements require different types of answers. Understanding what the term "mind" could be referring to is best served by an etymological approach. Imaging based on scanning techniques shows without any doubt correlations but offer little explanation however the mentioned correlations are often treated as such.

The crucial fact is that neurological processes are without question involved in the bringing forth the workings and effects labelled as "mind" but if these are causal is a whole other matter.

For the latter, the importance of operations executed in the in principle public arena are more than often overlooked.<sup>115</sup>

### *Radical constructivism, categories and concepts*

Waking up in the morning a scene appears composed of meaningful units. We see windows, a house on the other side of the street, a bird on the roof. The world unfolds itself over there in front of the senses. The observer seems to accept that this presents the world as it really is, a panorama without an end. Some items appear transparent, recognized without a shred of doubt others remain for a moment opaque. Man seems to be a discoverer, an organism lifting the covers of what is out there. This condition is synonymous with having knowledge and the quality of it improves in pace with it agreeing with that what really is out there. The expectancy is that the depiction brought forth by the senses collapses with what exists out there independent from the observer.

That is the way commonly is thought about the world, the way the world is considered as a natural instance. That is the way it is.

Question is, is that indeed the case? Is that really the nature of having knowledge of the world?

In 1710 Giambatisto Vico notes "If our senses are abilities i.e. instances bringing forth an experience, then from this follows that the qualities of the objects are the products of that activity executed. In other words the act of seeing brings forth colours, sounds only exists thanks to the ability to hear, the experience of cold or heat only by the faculty of touch" (mentioned in Gash & Glaserfeld, 1978).

This quote is important because it not only describes the constitutive reach but at the same time expresses its limitation.

The reach of the ability and the limitation of it are only expressing different perspectives of the same.

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<sup>114</sup> Also called raw feel. The term "qualia" got introduced by the American philosopher Clarence Lewis in 1929 referring to the direct subjective experience. This got also discussed by Jackson offering famous example of Mary who knew everything about the colour red but never experienced it. (Jackson, F. Epiphenomenal qualia. *The Philosophical Quarterly*, 32:127-136.)

<sup>115</sup> At this point scientific thought takes an rather strange turn. Theories considered elegant testify often of simplicity which is praised as the pinnacle of beauty. Except, in case of consciousness. Then simplicity is considered to belong to the realm of fantasy. The brain as the emergent source of mental faculties is after all enormously complex and it seems silently assumed that a relevant theory must be complex also.

Vico mentions abilities. He might as well have spoken about the body. As a perceivable entity it is easier to discuss, more difficult to refute. Why does a grasshopper not engage in matrix algebra? The answer is trivial: the anatomical abilities of this organism do not allow to engage in an enterprise of this kind, moreover it is absolutely no part of its life world in the same a television set is completely alien to a medieval peasant. The morphology and the operational abilities of the body determine the life world. Why does an earthworm not pick fruit? Precisely, for that reason.

That principle is so trivial that it is astonishing, even mind blowing to establish that it is readily overlooked when the human is subject of discussion. The idea reigns that man is capable to acquire knowledge of a reality as existing independently from him in the position of observer. How this is to be accomplished remains obscure, but apparently it seems to be achievable.<sup>116</sup>

But let's get down to it, how it might be possible for an organism, any organism for that matter, to transcend the confinements dictated by the characteristics of the body, is a complete mystery. An all too hasty reaction might consist by referring to the possibilities opened by micro and telescopes, radioscopes, imaging techniques, travels through space, miniaturisation etc. but an approach like that overlooks the fact that all these contraptions became developed precisely within the confinements of the body. Whatever the perspective taken it remains an embodied operation. Piloting an airplane cannot be accomplished by an organism without hands.<sup>117</sup> No grazing animal lives in the treetops, not because there would be no food there but because the body they have does not allow it.<sup>118</sup>

As mentioned earlier every phenotype or any particular form of the body brings forth a particular system and dynamics, sometimes improperly called logic. This fact deserves more attention than normally given. It is more than a just so fact. It is of the same order of importance as Kant's insight that "the thing in itself" is out of reach for human knowledge, moreover that the suggestion of a "thing in itself" is itself nothing else than indeed a suggestion, a thought.<sup>119</sup>

This brief explanation wanted to stress a fact which cannot be doubted: the morphology and the operational abilities of the body determine the way survival will be realized. Parts of this are aspects which might in the end be conceptualized into "knowing and knowledge".

### *One question, two trajectories*

The idea is to raise a better understanding of the specific character of the human being. What kind of a creature is man? What is the characteristic making him stand out against all other organisms? This problem seems one single question. But on closer inspection two trajectories in providing an answer lie open.

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<sup>116</sup> It could be objected that naive realism of that sort is no longer endorsed by most of the scholars, that there is awareness of the fact that knowledge is all about models offering predictable outcome. This is probably the case but the observation that the literature is full of statements and opinions testifying of a degree of naive realism can neither be denied. However no scholar wanting to be taken serious still endorses the idea of Cartesian dualism, concepts such as mind and mental remain used as never before. It comes as weird that apparently no one seems to consider that these instance might never have existed (recall the case of phlogiston, the example given earlier). Strikingly the inadequacy is getting attributed to the reach of the ability to know, man seems not yet able to realize grasp of it.

<sup>117</sup> Even the proposal that in future machines might be controlled by the transduction of brainwaves falls within the boundaries of that logic.

<sup>118</sup> Cf Gilbert, J. *Hands and imagination, manipulation of the basic dynamic underlying displacement*; also in the abbreviated version *Hands*.

<sup>119</sup> Reference made to "noumenon", meaning that what can be thought.

One is more technical in kind. Suppose someone is getting confronted with an object absolutely unknown to him. Obvious questions are: what is this? What purpose does it serve? How does it work? In function of the subject central in this discussion it are exactly questions of this kind getting formulated from the fields of anthropology, paleoanthropology, philosophical anthropology, biology and ecology. What is man and in what exactly is he different from other creatures?

The other trajectory which in contrast to the previous could be called semantic departs from a storyline. That refers to a meaningful description allowing an understanding of the world. Religious frames of reference offer an example of this type. The world is getting staged in a particular way giving rise not only to a pure form of understanding but also to the meaning of it all. This then becomes the perspective on what characterizes man. Moreover it provides a set of rules what to do in order to conform to the storyline imposed. This does not restrict to religions but to all types of framing trying to offer an answer on what it is or should be to be human. Therapeutic versions of framing offer another example. Types of behaviour or moods considered to be cumbersome are made understandable against a meaning giving framing. The latter pretends and accepts to offer a correct depiction of what is going on. Moreover, that acceptance is a necessary condition for the therapy to be effective. The same also goes for philosophical considerations. The Western culture for instance is burdened by the heritage of the Greeks. The very introduction of the idea that there something like an essence, the question into the nature of the essence, the conditions providing a truthful depiction, the whole idea of what is truth itself, the distinction between appearance and reality, the distinction of body and mind... all these are part of a particular storyline, scenario or discourse trying to define what it is to be human and its purpose.

The confusion is obvious. The need experienced is to gain insight from a technical point of view aiming to answer how it all works. While, and this is the crucial mistake, the answer is being looked for through cultural and history influenced versions. As an illustration take the understanding of the human living in the Middle Ages applying the filter of a psychological model which originated under the circumstances of a 19<sup>th</sup> century society.<sup>120</sup>

As the stress will lie on description of operations provoking a particular effect, the explanation offered will follow the technical trajectory. The idea is that whatever the historical background the operations have to provoke the same effects. These will then receive a meaning giving version according to the opinions reigning in that period. The production of certain vibrations will on the level of physiology provoke a similar effect however one culture will appreciate these as horrible while another culture will be carried away. Technique and the meaning attributed are two different things.

It could be objected that the actual presentation also is raised against a particular historic meaning providing background, hence must be a storyline too. That is a correct comment. The implication would then be that the approach offered becomes contestable.

Indeed as soon as a stimulus of second order is applied to raise a displacement in space and time in the experience and by this bringing a scene to life, from a strictly technical point of view a story is getting raised. The fact that one story might be technical and another semantic doesn't change that.

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<sup>120</sup> Recall note 12 on Muchembled.

However, the pretension of the approach offered in this text does not aim to reach further than “x being executed gives rise to y as the effect”. It is exactly the same for what is called a scientific practice.<sup>121</sup> The success of the latter approach lies in the fact that a model, whatever the model, only is receiving recognition in so far it produces predictable outcomes. This agrees with the aim set in this text to expose operations realizing an effect which are predictable. Recall the example of the physical sound wave provoking the same effect again and again despite the fact that the storyline provoked by it can change overtime.<sup>122</sup>

In summary, the approach proposed does not question which story or version is right and which is not in depicting the world – as it is assumed to exist objectively, but wants to know how a story in first instance is realized.<sup>123</sup>

### C. The steppingstone

#### *The approach*

Suppose a mouse's nest. The world experienced by the little ones has to bear the character of a holistic experience fed by the local environmental conditions and the particular circumstances of the moment. Their “mission” is to look out for shelter, food, a companion to procreate and to avoid potential dangers. That very same condition in principle applies to all living organisms the human species included. It comes down to an environment, a niche in which the individuals of a species have to survive amongst species of the same and of a different kind. This is life in its most primary form. This is the basic condition onto which perception and motor abilities have to hook up. But distinct to the mouse the human developed contraptions allowing to reach on what escapes direct perception in the direction of the large, the telescope directed to the heavens (Galileo) or turned to the smallest parts (Van Leeuwenhoek and Hooke).<sup>124</sup> These achievements provoke attempts to develop action on the newly discovered levels. This presentation is actually simplistic. For the Western culture for instance the practice sketched so far is underpinned by the Old Greek question into the nature or the essence of that what is, in other words the question into the true nature of reality.

At this point confusion enters the scene, what level of existence is connected to reality?

Is that direct perception, experience and action? (the mice, for the human naïve realism)

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<sup>121</sup> There also exists a naive realist interpretation in the scientific approach pretending a truthful at least the best achievable depiction of the world as it really is supposed to exist for the eyes of an independent observer. However according to an embodied view setting a goal of this kind is unobtainable this scope motivates many scholars.

<sup>122</sup> Here could as well have been referred to de Saussure's distinction of signifier and signified. However the signifier excited by the sound wave remains to be the same, the signified – more broadly the storyline – is subject to changes under the pressure of historic conditions.

<sup>123</sup> The light-bulb moment on the difference between technique and semantic occurred being intrigued by a drawing on water running upwards made by Escher. The technique was flawless, the story on the other hand nonsense. The conclusion was obvious: however the two aspects constituted one unity they must be different in kind each following a different system or logic. See also further, sub *Support and content, an anecdotic illustration*

<sup>124</sup> This illustration suffices for the actual context however there is more to it. Man acquired a penetrating and all encompassing way of approaching the environment making use of means. This mediation is ubiquitous and in my opinion is the feature lying at the heart of the difference between the human and all other non human species.

Are the workings of the smallest of constituents opened up by microscope or the large elements far away observable with the microscope? And further still making use of the technique of projection: the smallest constituents existing far away (stardust, physical elements on Mars...)?

Or is it the level of action?

What in the end does reality stand for?

Is that however the right question? Would it not be better to inquire about the relevance of the level or of the perspective? Jumping aside in a reflex, the direct way in the case of a car appearing out of nowhere, will be evidently of more relevance than to question the workings of the neural tissue in that occasion.

The deep question into what is the true based on a correspondence with reality is in cases like that not very helpful. The atmosphere of urgency which seems to radiate from that question is a particular way of framing imbedded in historic background. It bears of the same nature and forces to bring forth a same type of reaction as when asked "who did you meet yesterday afternoon?" while there has been no meeting at all. In the case of reality it is about a concept introduced in the transition from the 6<sup>th</sup> to the 5<sup>th</sup> century BCE. In that period the idea of nature as the instance to be taken for what is invariable appeared.<sup>125</sup> This provoked the question into the nature of "nature", what is the essence of that what is (ti estin ti). In turn it confronted with practical problems: what is the best way to approach this conundrum, the best way to acquire knowledge, the best way to unveil the true essence?

Awareness of the historic background is essential because the storylines brought forth by it veil and divert from the question of the operations relevant in a particular context. The awareness mentioned allows to bracket these storylines or historic versions and to focus on the relevant operations.

What is the theme central in this exposition and hence what is the scene or level that might be called relevant? The answer has already been given in the part mentioning the new or modern synthesis. It was said that whatever the cause of the change (contextual, behavioural, genetic etc.) the effective selection occurs on the level of the phenotype. That refers to the viability of the bodily form and abilities in the immediate surroundings. This is the scene of relevance here: the form and the abilities of the living organism, the body in its tangible guise which in the case of the human – being bipedal and provided with hands able to grasp... - allowed types of operations bringing forth particular abilities not observed in other animals.<sup>126</sup> Reduced to the core the question of importance is: what is the said form of doing resulting in effect xyz?

### *Brain-centrism or brain functionality*

What is the function of the brain or the workings of the neural tissue?

In mainstream thinking two levels are getting distinguished alas often mingled without any form of distinction. On the one hand there is neural technique in the broadest sense encompassing neuronal surgery. The focus lies on technical interventions provoking observable effects. Think of the work of Wilder Penfield, Benjamin Libett and the group focussing on the workings of motor neurons, mirror

<sup>125</sup> This has been discussed earlier under "Concepts with a historic provenance"

<sup>126</sup> It should read here "to that degree of sophistication" as some animals also show elementary signs of using means.

neurons in particular. Some of the scholars in all this do not limit themselves to reports but offer interpretations of the observed results. That is the case for Libet engaging in considerations on consciousness and Michael Arbib suggesting that the observed workings of mirror neurons might be the substrate for the coming into being of the faculty of language.

Net seldom the reputation of the scholar in question plays an important role. The underlying idea is that scholar xyz has been involved in successful and maybe spectacular research before provoking the conclusion that whatever he has on offer will be of same standard. On the one hand Penrose for instance did brilliant work in cosmology on singularities and on the other he later attributed the origin of consciousness to – in his own words - the workings of still to find quantum gravitation fields in the neuronal tissue. Something similar is the case with Crick, one of the two scientists “making use” of pictures realised by Rosalind Franklin in order to construe the model of the double helix. After having been granted the Noble Prize, Franklin got neglected by the sports; he engaged wit enthusiasm in the study of consciousness suggesting that a resonant 40Hz vibration would have been of importance in the whole matter.

Concluding that it is a cautious practice to accept interpretations offered by experts in experimentation. But apart of that type of bias interpretations from the past remain slumbering. It is hard to find someone still defending Cartesian dualism in public. But the accompanying register of concepts is undiminished in use by this leaving its marks in the experience. Mind and mental abilities are still distinguished from the body as if it were different instances with the stress on “instances”. Besides that there is the shift in the direction of the central importance of the brain, a shift dating from the 17<sup>th</sup> century.<sup>127</sup> There is of course nothing wrong with that. Man could not be thought of without the workings of the neural tissue.<sup>128</sup> The problem is that it does not end there as there is a lot more attributed to it. The brain seems more like a fountain from which almost magical abilities well up. This is even the case for the physicist reducing all what is to the form of matter. Even in these cases there remain abilities or dimensions not wholly reducible to matter.<sup>129</sup>

In the approach chosen the neural tissue takes a constitutive part in the whole of the dynamic of the living organism. It is part of it, a necessary condition even, but not the essence determining the human condition. It is rather to be understood as a node. Noble and Davidson observe rightfully “(...) practices recruit the structures of the brain rather than being determined by them.” (1996:226)

It are situational and contextual practices changing part of the tissue into function regions, in the long run providing in principle omni-functional neural areas with specificity (Keijzer et al. 2013). Neural plasticity testifies of the fact that this suggestion is not without ground.

In short, against the metaphor of the brain as an Alladin’s lamp from which after fierce rubbing all kinds of wondrous abilities escape another depiction takes form: that of an acting organism in an instable environment provoking answering behaviour whereby the activity of the brain supplies an essential contribution.

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<sup>127</sup> For the historical shift: R.L. Martensen, 2004, *The Brain Takes Shape*. Oxford University Press.

<sup>128</sup> Taken to the extreme unveils the true appearance of brain-centrism “remove the brain and cognition is deleted, ergo cognition is situated in the brain”.

<sup>129</sup> Qualia has been mentioned before under “Authentic features versus features with a historic background”.

The aim was to draw the attention to the fact that different perspectives got intermingled as if they all belonged to the same order. That kind of bias does not imply that one perspective would hold more correspondence to reality than any other. The importance is that each type of question connects to an order which is most suitable considering the circumstances or the goal set.

Looking for factors basic to the development of stone tools on the level of mutations is not the best the best way to proceed. To that end it seems more favourable to focus on changes in the environment or broader the ecology, which were influential in determining which species would survive and which not. For example has speech developed as a consequence of a flawed copying on the level of genetics or did it come into being under the pressure of a practice fitting the changed ecological conditions?

This does of course not exclude that a malfunction in the production of speech sounds could not be remedied by an analytic and mechanic intervention. But that is not the point here. The question central in this contribution is: how to produce typical human skills in the immediate circle of existence?

#### *Four stages*

As a final note before discussing the features individually and taking into account what has been said in the previous pages, four stages are to be distinguished.

In first instance there is the animal condition the human once shared with all other creatures in particular those most akin. Existence is determined by the condition of the primary motives at that very moment within the possibilities of the body possessed.

In the second stage there is already a kind of development consisting of the introduction of bipedal locomotion, an intensified use of the hands and the adaptation of the respiration etc. features accompanied by adaptations on the level of anatomy. This results in an anatomical form of readiness which is present in newborns.

Social pressure drives the condition of readiness into realization. This has an impact on the directness of the animal organism and drives it in the direction of development of features considered to be human. This is the subject of the third stage which however has to be brought to activation again and again. For instance sounds in order to be recognized as speech have to acquire a particular form.

In summary:

1. the animal condition
2. anatomic adaptations
3. ontogenesis
4. given the previous elements as necessary condition, execution provokes the desired effect

#### *Schematic overview*

Each depiction is based on prior assumptions. These provide the framework as background for the platform onto which a theory, a hypothesis or an explanation has to be unfolded. In that sense, clarification is a must. At the same time it supports understanding. That was the goal of the explanation offered so far. It must be added that these discussions merely are introductions. The interested reader

should be served better with a more profound elaboration.<sup>130</sup> But what has been offered suffices for present goal.

As reference a schematic overview will follow.

#### *the meaning of explaining and understanding*

Being and consciousness as fully dynamic and, as the way they manifest themselves in the open (phenomenon)	Tangible and virtual objects manipulated in the same way disregarded their difference in kind (real mountains to be grasped by the senses and, golden mountains as metaphor)
“concept” itself being a concept of a cognitive scheme	Ability: potency of execution?
Knowledge as a dimension or aspect of being; the origing of it laying in manipulation / Greek “techne”	The background of features: following from “techne” of from history based interpretation?
Radical constructivism: the abilities of the body determine the depiction of the environment/Umwelt	

#### *The circumstances*

The initial condition Phylogenetic and actual similarities	Adaptations in context
Development & adaptation, scheme	Relevant adaptations in the context of the actual discussion  From phylo- to ontogenetic and to execution/application

#### *The stepping stone*

The role of the brain: causal or functional?	The relevant scene: action in the public arena
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<sup>130</sup> Such as by “The Forgotten transition” and the supplement; “Objectification as lynchpin”; “Beyond the Material Engagement Theory”; “Script”; “The 5th ape”; “Unveiling the mind”; “Deconstruction of Suddendorf’s Mind followed by a reconstruction” ...



## The features

### 1. Displacement

#### Specification

That the human is a species amongst all other species is commonly accepted. All species exist within and are bound to the confinements of the local and the actual.<sup>131</sup>/<sup>132</sup> There is absolutely no reason why the human would escape this basic condition. But still... in the experience the human succeeds in focussing on subjects transcending the borders of this condition of being bound. However bound to the ground on which he stands and to the only moment he can exist he seems to be able to displace himself. This is a most if not the most remarkable feature characterizing the human species.

If might be looked for the one thing which could baffle any person then without doubt this is the best candidate. Quite often language is mentioned to take this position. But it will be made clear that language is a spin-off absorbing all attention.<sup>133</sup>

All creatures exist only in the actual and the local. The duration of the actual differs from species to species. A fly for instance takes in seven times the quantity of input-data compared to a human in the same objectively measured slice of time. This implies that for one component of information the time taken by the fly is shorter making time in the experience running slower.<sup>134</sup> The volume of the local on the other hand is determined by the reach of the senses and the motor capabilities. Hence the experience of time and space here is understood different than Newtonian frame of reference we in day to day life are used to.

But the way explained in the previous lines reflects the basic condition all organisms find themselves in, man no exception.

Distinguishing factual from experienced existence is suitable in this context. All creatures are in a factual situation. That refers to being there where one manifestly is. That is of course also the situation for the human. In all other animals the factual mode collapses with experience. The experience instantiates

<sup>131</sup> Bishop-Köhler hypothesis; W.A. Robert in Wasserman , 2006:161; Clayton, 2009; Suddendorf & Corballis, 2010; Tulving, 1983; Craver, 2014. The astronomer Caleb Scharf, a very different context, focuses on the importance of handling information. In an interview he argues "We generate information and carry this around. (...) this is not saved in DNA (...) cannot be inherited on the level of biology (...) but we are however able to transfer by making is part of the artefacts we surround us with. This provides us with an enormous advantage" (De Standaard, 21 aug. 2021; p.21/ my translation). In a sense he only repeats the idea of extended cognition formulated by Clark & Chalmers, 1998. *The extended mind* an idea Clark added an elaboration in *Supersizing the mind* (2008).

<sup>132</sup> The critical reader might observe that this subject has already been discussed over and over again. Indeed. The repetition is intentional because it has to counter convictions which as self evident, even taken for natural dominate the common understanding. The position taken is more then a snippet of casual information, it is promotes a radical redirection of the perspective.

<sup>133</sup> This is a point of view different from mainstream thinking considering language to be the transference of information and in second instance an instrument to motivate people into particular expected behaviour (pragmatics). In the actual context language is getting approached as the use of an object in function of a substitutive stimulus in order to provoke a meaningful experience in the other, all this based on the system underlying the manipulation of tools. The system or logic lies at the core while the tool can adopt different forms (auditive, visual, tactile...). In his type of action the visual (writing for instance) is not considered to be a transformation of the auditive (speech) but as a mode in its own right.

<sup>134</sup> That is why it is difficult to catch a fly because the insect sees the human movement in slow motion and has the occasion to escape the blow.

what and where they are. Being, perceiving and experiencing... all collapses into one dimension. This is different only to man. He is like all other creatures only there where he factually exists. But in the experience he can focus on subjects transcending this defined position. Being present bodily but absent in the mind. In thought he can wander around.

This type of experience is so ubiquitous and man is so used to it that it appears to be the natural condition. But the biological basis should not be neglected. Being bound to the local and the actual is the very first condition, the primary one not to say the natural mode referring to the biological basis. Being mentally in another place is quite extraordinary.

### *The twofold steppingstone into displacement*

The human experience specified by displacement i.e. not to collapse with the factual mode of being, has a twofold character.

On the one hand and part of the human condition: the perspective from a distance taking place in a confrontational relation. It is at the same time the feature laying at the heart of intentionality, the stance of being goal-directed in other words the stance of aboutness. On the other hand there is the ability to initiate scenes in the imagination, the voluntary thinking about this and that.

The first is characterized by actuality. The young child has to be educated into this mode approaching the world. But once that type of interpretation installed it is part and parcel of a condition which cannot be reversed. The second is operational in kind. It requires an execution in order to provoke imaginative content. The latter in particular is of interest for this explanation but he first cannot be ignored because it plays a fundamentally constitutive role.

### *The human condition*

The condition is related to the transition in the direction of objectification. That has a phylogenetic and an ontogenetic dimension.<sup>135</sup> For an elaboration reference is made to other texts.<sup>136</sup> A brief elucidation is however justified.

### **Phylogenetic**

On that level the transition refers to a reorganisation in the field of stimuli. In animals this organisation only follows from the condition of the moment of the primary motives, being hungry for instance, and the sensual and motor abilities of the body. The resulting general impression or "image" can best be described in terms of Gestalt-psychology.<sup>137</sup> What is of relevance in relation to the mentioned condition and abilities takes the foreground while all other elements become hazy in the background. Moreover

<sup>135</sup> Phylogenetic refers to the evolution on the level of the species i.e. how has an animal developed into the human while ontogenetic refers to the development on the level of the individual, the bringing up of a child.

<sup>136</sup> Gilbert, J. 2018. The Forgotten Transition, as well as to supplement to this publication (in progress).

<sup>137</sup> "Image" is an engrained metaphor. It translates the totality of impressions into a visual form, however the totality of impressions distributed over all sensible channels is what is meant.

what is relevant is dynamic in character. It is remarkable that animals seem to be sensitive to what changes in the scene, i.e. moves. What does not move risks not to be perceived, a phenomenon well known by bird watchers and hunters. In short what has been called the “image” bears the character of an event.

Under the pressure of ecological changes some branches of the great apes started to adopt an upright posture and locomotion. The hands already proficient in the grasping of branches and picking of fruits became freed from a supporting function in locomotion. Some even already made use of implements such as rods allowing to fish termites or nodules used as hammers for braking the shell of hard nuts. In that sense the use of hands and instruments was not a complete novelty. The acquired ease of a function in the locomotion opened a way to improve the skill of grasping of manipulation in handling implements. The crucial factor is that spread over an enormous window of time guided by the mentioned handling a selection in what is relevant in the perception occurs. Stimuli are becoming reorganised based on features important in goal directed manipulation making use of implements. Gradually a pattern in the perception gains importance, a pattern which could be called objectification. The concept is to be understood in a particular way. In this contribution objects are not taken to be units occurring in a quite natural way in a sense waiting to be discovered. What is coined “object” in this case is an appropriate label attributed to a pattern of perception consisting of formal characteristics.<sup>138</sup> These relate to manipulation, in Latin “manipulus” or handful, in particular characteristics such as the form, the type of surface, the weight, the volume, hardness... in short all those qualities determining if some unit is ready at hand. This is by J.J. Gibson called “affordant” and by Heidegger “Zuhandenheit”. It is what fits the dynamic of goal directed manipulation. So far for the form, but there is yet another factor of importance: the act of judging. In the case of an event, the relevance of the stimulus drives into action. In the case of the object the formal characteristics of the unity which is in front of the actor are of importance. These characteristics are located over-there in front bringing to light a particular relation based scheme: “in front of” or confronting. Distance occurs in a twofold way. In first instance within the framework of space to be understood as the volume circumscribed by the reach of the senses and the motor abilities, already mentioned earlier, a type of frame of reference shared with other species. In the case of the human there is however also the introduction of a stance of consideration (etymologically akin to examine, reflect on, ponder) of the reliability of the affordance features. A distance taking reflection takes place, a perspective of consideration. Thereby the stance of aboutness comes into being.

This is part of the human condition, a condition being the product of development. A development occurring in some branches of the great apes radiates within the group and over generations.<sup>139</sup> Stressing the transference is of importance as it takes place in the education of the individual or the ontogenetic dimension.

Three further observations are in order. Not highly relevant for this discussion but certainly worth to focus is that in this approach the handling determines the visual focus. This is different to mainstream thinking suggesting that the process starts with planning (thinking) provoking the act of visually

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<sup>138</sup> Object refers to the Latin “objectum” or that what is thrown in front.

<sup>139</sup> An easy to grasp example of that type of radiation and transference over generations is provided by the Japanese anthropologist Kinji Imanishi observing gangs of monkeys washing potatoes in the sea to capture the taste of salt, a practice taken over by newcomers and also by the offspring.

exploring as such preparing to initiate motor commands. As mentioned in this exposition, somewhat exaggerated, it is the manipulation, the handling, broader still the negotiation of the environment guiding the visual focus."Exaggerated" because, action and perception are actually one. A second point to remind: an object is not considered to be something existing in the world independent of the observer but is a particular way of organizing input in relation to mediated manipulation. Thirdly a particular perspective is involved. Once that has been installed, i.e. imposed by education, there is no way back.<sup>140</sup>

## Ontogenesis

In the previous paragraph on phylogeny the focus was on the development of a pattern. That is taken over by members of the group and overtime transferred to growing children. Two observations should be made. Firstly it is getting transferred in different ways. Explicit in a conscious process of education but the implicit imposition is strongly present from the very first moment.<sup>141</sup> Secondly, in those rare cases the process of enculturation does not occur the purely Gestalt based organisation of visual input remains in place implying that the pattern coined "object" does not get installed.<sup>142</sup> These observations find confirmation from different angles such as experiments with animals, developmental psychology and also experiences with congenital blind people having gained sight again after surgery and the already mentioned neglected children.<sup>143</sup>

The experiments with animals by Austin Riesen (1950) and by Hubel and Wiesel (1962) are well known. They subjected young animals to conditions which were absolutely alien to the species. The conclusion was that the recognition of what was to be considered the natural environment was not evident more precisely the findings showed that it was a product of education. This got confirmed from a very different angle. Congenital blind or people blinded at a very young age underwent surgery decades later by this regaining eyesight. This got illustrated by Prakash an organisation working in India treating children with an innate form of cataract. For the West there is the case of Mike May who at very young age got blinded by an explosion. In both cases the concerned seemed physically to be able to see, but they experienced difficulty acknowledging different forms as objects, let alone to recognize and identify these. It even went that far that Mike May after years of efforts returned to the lifestyle of the blind. Cathleen Moore, professor psychology at the University of Iowa suggests that these people experience the same condition as some one learning a second language later in life. This too takes great effort. In the latter case and maybe as well in the former, there seems to occur a threshold, a critical moment.<sup>144</sup> Findings from the field of developmental psychology show that learning to acknowledge (i.e. organizing input into meaningful entities) followed by a process of identification seems to happen in subsequent stages in time. It all starts with what has by Wertheimer been called "das gemeinsamens Schicksals", a

<sup>140</sup> It is like having acquired the skill of swimming. Once learned it cannot be undone . For a more elaborate discussion: Gilbert, J. 2018. The Forgotten Transition 2, I.1.

<sup>141</sup> The implicit way leads to what Wittgenstein calls the imposition of the "Lebensform". It refers to already present meanings and interpretations of the World in which the children are immersed. It reaches further than a pure cognition. It encompasses all what is involved in the practices of a particular culture.

<sup>142</sup> In the case of feral children or in cases of extreme neglect (the case of Genie for instance documented by Bromly Davenport in the movie *Mockingbird don't sing*. For a discussion on feral children: D.K. Clandland, 1993. *Feral children and clever animals*. Oxford University Press.

<sup>143</sup> These are getting discussed in a more elaborate way in The Supplement to The Forgotten Transition, chapter 3.

<sup>144</sup> Cf Kellman in Gellman et al. 1996: chapter 1.

condition which according to Slater and Kellman not even occurs at birth (1996:23).<sup>145</sup> Here too the register borrowed from Gestalt psychology is best suitable. In the earliest of stages children seem to group elements moving together into a unit. Movement thus seems primordial; an idea suggested earlier (Ostrovsky, 2009). Around six to seven month recognition of illusory borders appears. A series of dashes becomes seen as a bordering line. At one year edges become recognized opening the path into the further recognition of objects. Culture differences also play a role. Aboriginal children in tribal areas learn to identify different units compared to children educated in big cities in the West. Trackers recognize meaningful patterns where city dwellers only seem to discern dust. And within the West itself the Aristotelian concept of an object differs from a post-Galilean perception.<sup>146</sup>

Rounding up, also the cases of child neglect provide data. Genie the child from Arcadia in California has already been mentioned. But there are also cases known of foundlings which - difficult to grasp - have been raised by animals. They all testify of an inability at least great difficulty in acknowledging objects let alone identifying them.

These illustrations wanted to make clear that perceiving some configuration as an object is a matter of formation; an object in other words is not a natural kind waiting to be discovered.

The obvious question is how this becomes implemented. There is of course a dimension of explicit education. With persistence and endless patience children are learned to produce the phonemes resulting in meaningful sounds proper to their culture. But there is also a strong form of implicit imposition at work. The newborn is without a moment of respite surrounded by if not overwhelmed by an endless collection of configurations we call objects accompanied by a series of sounds. Adults hanging over the crib provoke gently but in some case prod with a degree of urgency to engage in imitation. In these conditions the newborn from the moment of his first breath is submerged in a world filled with standardised forms and patterns which are accompanied by a repetition of acoustic input and by repeated emotional payloads. The desired is applauded and reactions considered to be wrong are answered by grunts of disapproval. In a human orchestrated context there is no escape to this kind of educational force. At this point what Wittgenstein coins as the "Levensform" is getting imposed "manu militari".

In this stage of development the meaningful configurations are imposed, as well as the object pattern in perception as mentioned, as the connection between specific forms of objects with series of phonemes of graphic signs. That process occurs implicit and explicit. It is precisely this apparent ease that brought Chomsky apparently neglecting the exerted force to assume a poverty of the stimulus appearing to him that it had to be innate in kind.<sup>147</sup>

### *The association*

The associative binding which develops into a skill to deal with series of phonemes occurs through practice under a constant pressure of seduction alternated with coercion.<sup>148</sup>/<sup>149</sup>

<sup>145</sup> Reference also to Gordon, 2004:36 and Piaget both believe that the perceptual abilities immediately after birth are minute.

<sup>146</sup> The former interested in the nature of it, the second in the frame of reference based on measurement.

<sup>147</sup> Chomsky was also familiar with the ideas of Descartes and from Port Royal on this matter.

<sup>148</sup> Cf Vygotsky in "Language and thought" (1986). I recently witnessed a child around the age of three to repeat again and again a few unrelated words. It sounded rather behaviouristic, holophrastic, the verbs omitted. For me it sounded as a building up a skill while following the original

This way an orientation taking the form of a stance originated; a stance which could be called the human condition together with a skill in using tangible carriers which in turn allowed to manipulate meaningful contents.

Observe that these processes of development take years to get installed and fully formed. The hypothetico-deductive way of thinking for example reaches the stage of full development between the ages of ten to twelve.<sup>150</sup> Besides the coupling of sign and meaning also knows several stages.<sup>151</sup>

In summary:

- Anatomical adaptations take place such as the morphology of the pelvis, the workings of the lungs and of the muscles of the chest in order to provide a continuous flow of air, the form of the hands and of the feet, etc.
- Objectification as a specific design of perception develops.
- A coupling between acknowledged and recognized forms and signs (sound, visual...) gets installed as well as
- the position experienced (confrontation) and the perspective of taking distance (as in consideration)

### *A step back to the core*

Meaning lies at the core.

The dynamic of any organism is goal directed. Its mission or primary motivation is to survive.<sup>152</sup> From what happens in the environment and can be caught by the sensibilities of the senses the condition of the mentioned primary motivation defines the selection.<sup>153</sup> When hungry these elements will become salient and selected answering the need for food.<sup>154</sup> In conditions of this kind the most authentic and basic form of meaning starts to show. Here appears the quality of being meaningful in its purest form. Here the word "meaning" obtains its meaning.<sup>155</sup>

Next in line is the manipulation supporting means, the tool, the instrument.<sup>156</sup> The original implement was meant to serve one particular goal which already possessed a meaning (appropriate carrion found

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Chomskyan line of thought it would probably have been proof of an innate ability coming into development. A very different observation about association in this context is that it was already mentioned by Saint Augustine. His view is that thoughts are provided by God but the child has to learn the skill of producing the appropriate sounds to bring these thoughts to expression. Descartes much later still followed that idea.

<sup>149</sup> For a further discussion how the association developed in phylogenetic perspective reference to "The Forgotten Transition", "Objectification as lynchpin", "Beyond the material engagement theory".

<sup>150</sup> As described in the work of Jean Piaget.

<sup>151</sup> In "On Meaning" (chapter 1) six levels have been discerned. The first is determined by the degree of relevance in relation to the condition of the primary motives, the second in relation to the embodiment of the organism, the third lies in the original use of a tool, a fourth – as a matter of fact of relevance here – is meaning acquired by association. There are two more forms to follow: meaning based on definition and meaning by projection (as by the use of metaphor).

<sup>152</sup> In the final pages of "The origin..." Darwin refers to fundamental laws being growth and reproduction.

<sup>153</sup> A lion having a full stomach will not show signs of activity even with a new prey within reach.

<sup>154</sup> Experience shopping in the supermarket with an empty stomach.

<sup>155</sup> The following diverts somewhat from the line of the explanation but it is important to understand the status of a stimulus. The usual presentation holds that man is on the receiving end of the range of stimuli present in the immediate environment, stimuli which consequently are getting identified and processed. This overlooks the fact that in order to be a stimulus there has to exist some kind of bodily sensitivity able to capture the impulse. Simpler said if the body does not possess sensitivity for X than X cannot be a stimulus. From this follows that a stimulus is embodied or the body is the determining factor in this. A pig's nose has an immensely greater sensitivity than that of the human. For the pig elements in the world exists escaping the human completely. So embodiment is the key word here. Culture is a second. The attention of nomads catches other elements than that of city dwellers. In short something has to happen in order for a stimulus to be occurring at all but obtaining effective stimulus value depends on the sensitivities of the body of the receiver while for the human culture also plays an important role.

<sup>156</sup> Instrument from the Latin instrumentum i.e. building, construct, ordering.

for instance). A broken nodule with a sharp rim could serve to carve in order to make the carrion more manipulable. The act of carving collapsed with the meaning of the implement used. It was not considered a nodule with a sharp rim but a tool to carve. A third step extends the use to a generalization of the possibilities. It not only could be used to remove meat from a dead animal but also to accommodate a wooden stick of a sharpened end. By this one instrument acquired practice related meanings.

Until now the meaning following from the primary motivation has been considered to be the organic kind. This approach can be applied to every living organism. Next is the meaning following from the use of an implement which in kind is alien to the body, a silex nodule is used but not part of the body of the user. At this point a meaning related to the use, to the practice appears. This is the case for creatures making use of external units as in the case of hominids who started to walk upright and could exploit fully the possibilities of the hands. The next stage consists of a diverse use of the same implement. The plurality of meanings is based on practice.<sup>157</sup> The fourth step suggests the following hypothesis. The tool of which the meaning is bound to a specific type of practice acquires a new use in an unexpected event, for instance a nodule destined to hammer shellfish used as a weapon to ward off an unexpected enemy, in the end even killing him. This is an occurrence of meaning transcending the trivial daily practice. The tool acquires a particular meaning whereby the presentation of it activates reminiscences to that extraordinary event. At this point meaning by association comes into being.

This is of utmost interest for this explanation.

In its most simple form the mere presence of the object suffices to provoke the extra meaning in experience.<sup>158</sup> The hominid already is in the stage in which objectification with its features of a perspective of distance and consideration is getting installed. Within that frame of reference it is appropriate to think that the object provoking association not only appears in the visual field by chance, but being a tool is getting presented in an active way. It is not that far fetched to assume in the actor an intention to show and to expect wonder and admiration at least that holding the implement high will provoke an effect of some sort. However trivial this all might seem to be, it is a crucial moment: the manipulation of an instrument and the expectance of an effect. It introduces in the concerned an experience referring to some event that at the very moment is not happening. The implement is present but not the referent as the core of meaning by association.

In the experience the being bound to the local and the actual is getting transcended and this based on a non-problematic intervention. The latter refers to the fact that the effect follows from simple manipulations imbedded in an ongoing development i.e. the handling of tools in a way not observable in other animals.

Recall the distinction made between factual from experienced existence.<sup>159</sup> In the development discussed here the factual existence remains unchanged. It is impossible to be in another location than

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<sup>157</sup> It reminds of Vygotsky arguing that inner speech, an apparent mental act, originates in public situations where speech is addressed to other people. See also Gopnik suggesting that inner evaluation occurs in precisely the same way as the evaluation of the behaviour of others in a public event.

<sup>158</sup> Present could be understood as “represent” but not in the Cartesian sense of depiction but in the meaning offered by Edelman “making present again” (Edelman, G. biologist, Noble Prize in 1972)

<sup>159</sup> Sub The Features; Displacement; Specification.

the one the individual actually is.<sup>160</sup> But in the experience elements which are not manifestly present in the factual setting seem to appear.

On closer inspection this situation is not exceptional at all. For a mouse approaching a urine trail left by a cat in the experience of the mouse the cat will be in a way present as well. The exceptional lies in the fact, that the hominid by the execution of an action can provoke the said experience himself. It is an act characterized by a particular feature: he can fail to execute.<sup>161</sup> For the mouse the urine trail cannot be avoided. This kind of inevitability is absent in the case of the possibility to perform the provoking gesture.<sup>162</sup>

This is not a trivial matter. It is a feature marking a rupture. Objectification transforms the hominid into a creature with a superior skill never witnessed in the behaviour of other animals, at least not to a degree of similar sophistication and skilfulness. This adds the experience a complete new possibility; a possibility that until then was not existing at all. It will make that creature very special.<sup>163</sup>

The importance of that effect is widely recognized. Plessner considers the animal to have a centric orientation while the human testifies of excentric perspective.<sup>164</sup> MacWhinney speaks of ungrounding while Gärdenfors refers to "detached representations"; it is a given also stressed by Hurford.<sup>165</sup> Dielenberg in turn observes that the human takes "unseen agents" into account. For Suddendorf the idea of "time travellers" is an important theme.<sup>166</sup> Bishop and Bishop-Kohler present the hypothesis that only the human seems to be able to anticipate future needs.<sup>167</sup> Hockett in his famous criterion on language points out displacement as one of the most important features. It is a point of view also taken by the linguist D. Bickerton.<sup>168</sup> Some authors mention this novel possibility as a part of a sophisticated ability as for instance language. But competences of this kind do not show up ready to the last garter button, quite simple actions offer the stepping stone.<sup>169</sup>

However by naming Hockett and Bickerton language became mentioned it is in no way the goal of this discussion. It is only used to point out that in principle quite simple manipulations of objects associated to particular meanings can give rise to an apparent magical competence such as language.<sup>170</sup> But blinded

<sup>160</sup> This is a highly trivial statement, rhetoric in kind only meant to add stress.

<sup>161</sup> For an elaboration on this subject: The Forgotten Transition, chapter 2 sub 2.2.5. *Displacement, freedom and reification*.

<sup>162</sup> Ramachandran reports that apes in captivity having learned a (humanlike) "language" in the condition of being hungry are able to produce a sign which refers to a banana which is not present in the immediate surroundings (Ramachandran, V. The Tell-Tale Brain; 2011:136). Firstly this is not a real life situation in the forest, but a setting organized by human intervention. Secondly the question arises if apes are indeed capable if performing that trick, why once in their natural biotope no signs of this behaviour ever have been observed? The answer most probably is that apes never developed objectification i.e. a condition allowing to manipulate an object present *over there*. Seen that way the stage of the technical skilled ape would have been a necessary stage (cf another contribution "Script")

<sup>163</sup> Objectification and the attendant perspective of taking a distance is one aspect, being able to initiate imaginative content in oneself another. For more discussion on this subject, Paralipomena: Van aap tot mens (Dutch), chapter 137; The 5th Ape, a simple introduction into anthropogenesis, chapter 19. It discusses the distinction and the transition from the condition of a technical skilled ape into the next stage on the introduction in the experience of self initiated imaginative content.

<sup>164</sup> Plessner, H. 1928/1975. Die Stufen des Organischen und der Mensch. Walter de Gruyter.

<sup>165</sup> MacWhinney in Givon and Mall, 2002:239 and for Gärdenfors: 2005:1; Hurford: 2014:64-8.

<sup>166</sup> Dielenberg, 2013; Suddendorf: The Gap, 2013.

<sup>167</sup> Bishop (1978) and Bishop-Kohler (1985).

<sup>168</sup> Hockett C.F. on design features of language, 1958. Bickerton, D. is getting mentioned about this by Ramachandran in The Tell-Tale Brain. Also Arbib and Bickerton: "... the emergence at some specific time and place of the first signals that did not refer explicitly to the here and now would have represented the crossing of a clearly marked frontier (The emergence of Protolanguage, 2010:168)

<sup>169</sup> The early computers made use of adapted radio tubes able to switch on and off back and forth, thus realizing the execution procedures based on Boolean algebra, however complicated machines all by all quite simple processes. Contraptions of this type provided the basis for the ultra miniaturized and complex computers we all use.

<sup>170</sup> It will be evident that the coupling mentioned does not occur on the level of the object itself. In its function as a stimulus it activates a connection between two clusters in the neural tissue (from another point of view called signifier and signified). It would divert all too far to go deeper into this subject, referring that the object is connected to a particular meaning suffices.

by the apparent complexity and steps in the procedure escaping understanding, the simplicity of dynamic on the lowest level is getting overlooked.

Observe someone trying to remain immobile and expressionless. This condition will not provoke meaning by association. But as soon as the observed performs an action which functions as a substitutive stimulus as holding high a nodule used in killing an enemy then in the observers meaning is coming to life. The gesture executed realizes a representation.<sup>171</sup> It implies that an act has to get performed, not a just so act but one involving an object to which a meaning has been associated.

This allows transcending in the experience the boundaries of the actual and the local.

As an operation there is not much to it: the manipulation of objects associated with a particular meaning. Has an innate ability to be assumed?

Given the condition of anatomical readiness onto which education has been imposed as mentioned earlier, would the quite simple operation not suffice to provoke that effect? Take a piano. Its basic working consists in the striking of a cord, be it for a standard model off eighty eight chords and hammers. How simple is that? Nevertheless a trained performer is able to realise an overwhelming concert. Does a similar effect fall out of reach in the case discussed here, the manipulation of objects provoking series of displacements in the experience of all involved?

It is a heavily undervalued step in the development. In the instance the development to a technical skilled hominid already marks a cleft in relation to the way non human animals negotiate the world, the ability to leave the experience of being bound to the actual and the local behind, realizes a radical gap and opens the pathway to what eventually will be called the human condition.

### *Displacement, characteristics in the experience*

This development supported by changes in the anatomy, by training en by execution and raising a particular effect in the experience, requires some explanation.

#### **1. Carrier and content**

It is all about a manipulation of an object provoking a particular meaning in the experience. In this two elements appear: the object manipulated and the meaning provoked. The actual operation consists in manipulating the object; in the actual parlance it would be called a sign calling the effect. This is what is happening but not what is getting experienced, or rather how this process is described.

The mainstream conviction holds that man is provided with mental capacities, according to the most recent version, generated by the brain.<sup>172</sup> This is still a dualist appreciation in spite of the fact that no scholar today openly follows Descartes scheme. We act as if we manipulate the different meanings themselves. Some even suggest the existence of mentalese which subsequently finds expression with the help of language.

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<sup>171</sup> Holding in front in order to make it present (recall Edelman)

<sup>172</sup> For Aristotle (300 BCE) the brain had a radiator/cooling function in order to prevent the heart from overheating. Only in the 17th century the English medic Willis stressed the importance of the workings in the brain by this diverting the centre of the body away from the heart. One should realize for a moment how recent this all is, not even 400 years in the past.

This idea has a long history. It already appears in the 4<sup>th</sup> century in the writings of Saint Augustine, picked up by Thomas Aquinas, Boethius, Don Scotus and many others. In 1975 Jerry Fodor argued that based on what was known at the time, the concept of mentalese offered the most appropriate approach. This conviction is to this day respected. As such it diverts the focus from the more evident and less problematic alternative whereby the manipulation of physical elements whatever the make, functions as a trigger or is the carrier allowing secondary manipulation of associated meaningful contents.

Depicted in linear order there is not first the thought ordering the manipulation of object or sign, in first instance occurs the manipulation of objects subsequently provoking meaningful contents or (verbalized) thoughts.<sup>173</sup> This linear depiction is correct in the case of the ontogenetic development but once the process is engrained and running it follows a circular movement. An object calls a thought in turn provoking the manipulation of other objects and so on into an endless sequence whereby the interpunction becomes difficult if not impossible to mark.

To keep in mind: action as basis with meaning as effect.

### **Carrier and content, anecdote**

Image the following scene. Cut vegetables and bring water to a boil, add the vegetables, spices and some meat. These are the operations involved in making soup. Take the next step consisting of tasting the brew, getting in touch with smell and taste. Consider this as a dimension existing in its own right. As such there are two distinct scenes however the second is the effect of the first.

A simpler illustration is hardly imaginable.

But let us take another situation in which the test subject has no idea what soup is neither has knowledge about how to make it. Moreover in the setting organized he will be able to taste but not to perceive what goes into his mouth. He will be restricted to the experience of taste and smell.

The task is that he tries to explain what preceded the event of tasting, what rendered that experience he had.

There are two ways out. Or he attributes the effect to an instance or an organ which brings forth an experience like this as a finished product, or the test subject wonders what the operations could have been rendering an experience of this kind.

In the case of tasting the soup no one will be daft enough to assume an instance offering the experience as a finished product from an instance somewhere in the body. But astonishing enough this will precisely be the option chosen in case of experiences which are considered typical human. Without hesitation these are attributed to a mind or a mental instance that in a quite ethereal guise seems to exist somewhere. In the best case, the worst being the assumption that there really is something like a mind, it will be considered the product of the workings of an organ: the brain. The thought that it could result from the execution of operations – mediated manipulation – seems to be beyond the all possibilities.

## **2. The experience of the world as an amalgam of perception and imagination**

The framing as cause and effect could for the actual setting better be understood as source and effect. The effect refers to an experience. Concerning the source a distinction between an unmediated and a

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<sup>173</sup> It is relevant to remind of the points of view of Vygotsky and of Gopnik. Both authors stress processes in social and hence public activity.

mediated mode is appropriate. The terms used are actually self explanatory. In the unmediated mode the experience is fired up by direct forms of perception such as seeing, feeling, smelling. In the other mode an instrument associated with a second hand meaning is in play; recall the nodule with a sharp rim meant to be a scraper, used to kill an enemy and by this becoming a weapon (added meaning). But both modes result into an experience. However there occur qualitative differences – taking a bite of a lemon is different to observing an image of a juice dripping lemon – in the experience both effects mingle without a clear distinction.

Suppose further that one is in possession of a picture of one kilogram of gold and also of real gold bar of the said weight. However the picture also might give rise to all kinds of longings just as the real bar would provoke, the difference in order will be clear.<sup>174</sup>

It is however striking that this type of distinction is not made in a day to day situation when the experience is getting provoked by the use of words. There is no feeling having to deal with fictive situations. Suppose that I by making use of physical means, morphemes or graphemes i.e. words as mentioned in the previous sentence, refer to an aunt living in Paris. The first experience or dimension of the experience consists of the direct contact with the person I am speaking to, the second dimension is getting provoked by the use of 2<sup>nd</sup> order stimuli (Vygotsky) as the carriers of an associated meaning. Both dimensions provoked from different sources (the direct contact and the use of means) mingle into one global experience.

Questioned directly, anyone will agree that there is a difference, the direct contact being of a different order than the aunt present in imagination. But the important observation is that in daily practice and even within the domain of science pretending to transcend the folk-psychological level, experience based on direct perception and products of imagination are getting presented and experienced as one scene of events.

What is the importance of this?

However this experience is actually an amalgam fed by different sources, it is taken to represent reality. This is the world. While one should indeed be aware that a part of it is fed by direct perception while the other part is added through imagination.

This does not hinder nor harm day to day life. But it is of utmost importance in case the goal set is to gain insight in the – complex – nature of an experience, the latter in the sense of an interpretation or an understanding of the world.

A constructivist could object that the difference does not matter because after all: it is all construct.<sup>175</sup> This observation overlooks the core of the argument i.e. the statute attributed to the content of an experience.

What I wanted to stress is the fact that in the usual appreciation no distinction is made. The product of direct input and of imagination renders the experience of one single scene of the world.

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<sup>174</sup> I a more striking example might be needed: looking at an erotic picture and undergoing the experience first hand are of a different order.

<sup>175</sup> The Columbian neurologist Rudolf Llinas comes to mind. He argues that on the level of the visual experience there is actually no difference between the condition of being awake or dreaming in sleep. In both cases so he says the visual impression is a product of neural workings, hence constructions. (Mentioned in Greenfield, S. 2000. *Brain Story*. London: BBC Worldwide.

### 3. A virtual world

"L'homme n'a pas besoin de voyage pour s'agrandir. Il porte avec lui l'immensité"<sup>176</sup>  
Chateaubriand

The following only offers another point of view on what already has been explained. Here I want to stress the fact that to a large maybe even overwhelming degree the content of the experience is virtual in kind. Remarkably, effects of multi media applications such as virtual glasses – how striking can a name be, meeting rooms on internet, simulations in an educational setting are being considered a domain in their own right, admittedly referring to reality however in no sense an instance of it but a product of artificial means. The question arises what the difference might be with the condition of displacement or imagination as presented in this text.

This occurs on the level of input and only there. The stone nodule used to kill the enemy has itself not one property tied to killing enemies. It just got associated with the event in question. It functions as a stimulus of 2<sup>nd</sup> order provoking reminiscences – present in the bearer - of the event.

What contemporary is considered a medium giving rise to a virtual world fulfils the same function. The only difference is the endeavour to provide the stimulus with a guise approaching as close as possible the original meaning. Perceptually it should match reality.<sup>177</sup> With the modern techniques the image of a lemon becomes more lemon like but it remains an image and that does not change the structure of the experience – it does not allow taking a bite. Agreed, the quality of the picture like representation improved. The word "lemon" will generate less arousal compared to a holographic representation which is getting projected in front of the observer.<sup>178</sup> But whatever the source it keeps to be the product of secondary stimulation.

In that sense it is not too bold to conclude that as soon secondary stimuli are involved the world we experience is to a large degree virtual.<sup>179</sup>

### 4. The complex character of displacement

Until now the discussion focussed on a displacement in the sense of "Yesterday I met a friend in the market place". In this an action provokes an effect. It is about the use of physical implements to reactivate neural configurations already in place, called a signified from another point of view, by this bringing a particular experience to life. This is an adequate description sufficient to clarify an operation of this type. However in the end the experience is based on more than that operation alone.

In the following lines two supplementary factors will be offered.

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<sup>176</sup> Man does not need to travel to broadening his world. He carries the immensity with him (my translation).

<sup>177</sup> Think of a shooting game in which the stimulus appears a real shooter but is it just a visual spectacle based on light tracing.

<sup>178</sup> However, the scene of the biscuits "madeleine" presented by Proust is quite appealing too.

<sup>179</sup> This subject is discussed in "The Forgotten Transition", chapter 12.

### A. Characteristics of the transition in the direction of objectification

The handling of a means provides the basis from where a perceptive configuration functional to the manipulation in question is gradually getting installed.<sup>180</sup> This way an organizing principle constitutes a form which today is covered by the concept “object”. The gaze begins to select these properties which are in a positive way functional for grasping in particular, the possibilities of moving the hand in general.<sup>181</sup> Only the motor dynamic got mentioned but that is hand in glove accompanied by visual and tactile process of valuation in the sense of estimation and of measuring the form manipulated, measuring the degree of being ready at hand.<sup>182</sup> In this process or rather movement a relation comes into being, meaning that actor and acted upon are no longer collapsing into one but an experience, a perspective of taking a distance arises.<sup>183</sup> The incorporation of the nodule-hammer breaks up. In the experience it becomes some thing held in front of and inviting to look upon. It is a judgement based in the act executed implying a taking of distance in order to be able to judge. Questions arise in a non verbal form: is what is ready at hand fitting the abilities of the hand in relation to the goal set? However the following example is not quite suitable, think of a discus-thrower “feeling” the discus: is it the right size, does the centre of gravity feel right? In our setting is the form of the nodule right; is the rim sharp enough to slice meat from the carcass? Does it fit the hand and will it be effective? All this stimulates the origin of a type of judging transcending responding the circumstances of the moment in a pre-programmed way (genetic, learned, experience). At this point the requirements of the practical goal directedness force and frame the senses into a rather new perspective which could be characterized as “looking upon from a distance”.<sup>184/185</sup>

The core to remember: it is about the execution of an operation making use of an implement, an approach at the same time provoking a change in perspective i.e. the consideration (the quality and/or effect) of a unit in front of - hence on a distance - of the actor, the unit no longer incorporated but divorced from the actor into something standing on its own.

Taking a distance, standing-off is an important feature. It is here where the collapsing of all input into one event retreats and the “positioning there in front of”, the “da-Sein” (being *there*, not collapsing with *here*), the ready at hand (something being over there inviting to be grasped by the hand) starts to come into being. Sartre speaks of “cette distance nulle”, the distance which is not. Factually nothing changed so there is not an observable distance but it feels like there is one.<sup>186</sup>

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<sup>180</sup> A simple illustration to make it more tale telling: a child before the age of apprentice will have no particular interest in footwear. But once an apprentice shoemaker his world perceived will be focussed on it. In the subject discussed it is not about a concrete example such as shoes, but about formal characteristics in relation to manipulation.

<sup>181</sup> Cf the FARS-model, an acronym referring to the scholars involved being Fagg, Arbib, Rizolatti and Sakata. They studied motor neurons in relation the motor capabilities of the hand.

<sup>182</sup> Measuring not to be understood as comparing to a standard measure (length etc.), but bearing rather the character of an intuitive judgement in function of the goal set.

<sup>183</sup> Collapsing in the sense meant by Köhler when speaking about incorporation i.e. tool and body are experienced as being one.

<sup>184</sup> This marks the stepping stone into “aboutness” and into Sartre’s “cette distance nulle”.

<sup>185</sup> In earlier publications a sharp distinction was made between two situations, the older event based organisation fully driven by principles from Gestalt-psychology and the emerging object oriented one driven by the logic of mediated manipulation. It looked more a transition from one situation into a completely other one. Meanwhile I could not get around the fact that Gestalt remained to rule hence there was no radical gap. It looks more like Gestalt principles dictate the basic frame while the rules of mediated manipulation are getting imposed on top of it.

<sup>186</sup> Take reflexion i.e. thinking about oneself. The thinker isn’t actually split into a thinking side and another which is thought about, but it however feels like a distance is present between both dimensions.

### **B. The twofold displacement in space and time**

In the operation mentioned the object presented is associated with a secondary meaning and is as such taking the function of a stimulus of 2<sup>nd</sup> order in turn provoking an experience of which the meaningful content refers to an incident outside the boundaries of the actual and the local. In that sense the object becomes the vehicle or the carrier of the meaningful content. It provides the building blocks for what has been discussed earlier, the scenes in imagination, and contents with a virtual character making out what is getting experienced as reality.<sup>187</sup>/<sup>188</sup>

Therewith it becomes clear that the experience of distance discussed has a twofold dimension. On the one hand the experience going with or following from the perceptual organisation which would result into an object which is a process accompanied by another, that of consideration. On the other hand there is also the experience of distance rising from making reference to events transcending the actual and the local.

In summary, the experience of distance holds at the same time a characteristic implied in the perceptive cognitive act of objectification, and a reference transcending here and now.

But there is a particular relationship between both. The object is the necessary condition allowing to refer to some event outside the actual. Or the latter would not be possible in the absence of the former. The conclusion is that the experience of distance is inevitably based on the use of means.

### **C. A condition considered to be a form of alienation**

This experience of distance is often referred to as a radical gap, a fundamental mode of alienation. Lacan for instance refers to it as the price paid for entering the symbolic order. It leads to an experience of deficiency, a lack, a void. It is about a lack of immediate being, an unconditional given reality (*la manqué de l'être, le manque à l'être*). There no single signifier able to solve that problem, on the contrary the chain of signifiers installs it again and again. Because language destroys the immediate she at the same time calls a longing to restore the condition which has been lost. It is a never ending process because as soon as language is used the void is getting introduced anew.<sup>189</sup>

With this appears the myth of a lost innocence, the image of the lamb, the ritual gesture restoring innocence after the sin has been committed. Innocence refers to the Latin “in-noscere” meaning not harming. In Lacan's representation the human is harmed by the introduction of language.

To me this embodies the most extreme misconception to be thought of.

Because, it is precisely that condition which opens the characterizing abilities. Without it it would not even be possible to refer to a particular species recognized as “the human”. There would be a species amongst other species, maybe a technical skilled hominid in that way different from the others. But there would not be a radical rupture. It only would represent a more sophisticated mode of animal existence.

Negotiating the environment is the mission of all living creatures.

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<sup>187</sup> Sub “The experience of the world as an amalgam of perception and imagination”

<sup>188</sup> Imagination not to be understood as fantasia but in the sense of imaginativa, a distinction made in the ventricle approach dating from the Middle Ages. Reference made to Thomas, N.J.T. *Imagination, eliminativism and pre-history of consciousness*. Paper submitted to the “Toward a science of consciousness (TUCSON III) conference”, 1998.

<sup>189</sup> From “L'angoisse, le seminaire livre X.

Taking a distance is part of the way the human is fulfilling that. It is anything but alienation. It exactly expresses what it is to be human, it expresses the human condition.<sup>190</sup>

The idea of alienation goes back on dualism. It relates to the two world model present in the writings of Plato. On the one hand there is the world of the true ideas and on the other perceptions in his opinion offering nothing else but a scene of shadows. The problem is not particularly the presentation of two different contents but the fact itself of the introduction of two dimensions, in other words dualism. This follows from the question into the essence which in turn follows from the introduction of the invariable or "that what is" (*hoti esti*).<sup>191</sup> The said introduction embodies a fundamental turning point in the history of Western thought, a subject reaching far beyond this discussion.<sup>192</sup> Some clarification might be useful for further understanding. According to Lloyd around the 5<sup>th</sup> to 4<sup>th</sup> century BCE there was need for an independent criterion useful in settling discussions. Nature in the sense of "that what is" got chosen.<sup>193</sup> Morton in turn attributes the origin of the invariable to the production of surplus in agriculture.<sup>194</sup> But whatever the difference in explanation, both focus on the appearance of the invariable in that period. The introduction of the very idea would in time beg the question into the nature of it. As a matter of fact the whole of the history which would follow is actually nothing else than the mission to find out the nature of things.<sup>195</sup> In that sense dualism as a heritage from the Greeks became one of the most important patterns organizing and structuring Western thinking. The discrepancy between appearance and truth, between being and appearing, between language and experience are but symptoms of that structuring. One should profoundly be aware of the fact that this is a pattern and a version with historical background. Neglecting this fact by accepting the structure mentioned for a natural reality produces its own problems alas still troubling the actual thinking.

There is yet another perspective possible on the idea of alienation. The experience of taking a distance provokes a semantic tension. Similar as "milk" promotes thinking about "cow", "black" to "white" and not to round or square, the experience of taking a distance provokes the suggestion of a condition in which this is not the case, a natural condition in which distance is absent, earlier called the myth of the lost innocence. This is however an illusion because there is no real distance taking involved only a particular perspective, a way of looking upon the world. It is precisely that way that instantiates the human identity, the human condition. There is no such thing as the natural condition only the animal way but once encultured into the human mode there is no way back, similar to trying to undo the boiled condition of an egg.

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<sup>190</sup> For a similar point of view: Heidegger in "Einführung in die Metaphysik" (1953). He stresses that there is no difference between being and appearing, both collapse.

<sup>191</sup> The sequence the other way around might be more easy to understand. The introduction of the invariable is the stepping Stone, followed by the question into the nature or the essence of it. In the endeavour to answer Plato points to a true and a false version (allegory of the cave) by this not only introducing that there is something like a "true" version, but of relevance here the structure of duality.

<sup>192</sup> For an elaboration on this subject reference made to other contributions as "Mind what are we talking about, deconstruction of Suddendorf 's rise of the metamind followed by a history based reconstruction of the concept of the mind"; and "The remarkable character of Western thought"; further "Script, a simple introduction into anthropogenesis" chapter 19 in "The 5<sup>th</sup> Ape".

<sup>193</sup> Cambridge professor of history of science; reference here to the publication dating from 1991: Methods and problems in Greek science; in particular chapter 19.

<sup>194</sup> Timothy Morton is a professor at the University of Rice in Houston; originally researching romanticism but shifted focus to ecology.

<sup>195</sup> Recall Whitehead stating that the history of Western culture is but a footnote to Plato (offering one possible answer). Aristotle prefers another version but his texts only came available to the West after 1085 marking the fall of Toledo.

In summery, the experience of distance taking, an appreciation holding displacement unfolds in two dimensions. On the one hand “cette distance nulle” obtaining form as a perspective onto something positioned in front of the actor, and on the other hand a displacement semantic in nature. It will be obvious that this contribution focuses on the possibilities opened by the latter.

The comments made transcend the scope of this contribution. But omitting these would have left certain aspects in the obscure.

## 5. Two views on language

However it is not the aim in this context to discuss language, it is difficult to avoid as there is a line of thought in which language is characterized by a set of operations, whereby displacement plays an important role. There is yet another factor forcing to do so. Displacement in the experience not only provokes a condition of ecstasy (excitement). It also has an informative dimension as it tells something about something.<sup>196</sup>

In short, the execution of operations, displacement and information are factors making it difficult to neglect language.

In mainstream thinking language is taken to be an ability bringing forth a product. It has a neural basis and is innate, at least the impetus is.<sup>197</sup> This actually comes down to a secular variant of the older version in which language was a gift from God allowing to express thoughts, also instigated by God. Ideas of that kind are present in the writings of Descartes but as well in these of the more recent Chomsky.<sup>198</sup> This paradigm conquered a dominant position to that degree that other alternatives vanished past the horizon.<sup>199</sup> And, it is precisely another approach which is of importance here.

I will limit myself to some remarkable moments and ideas.

However Les Petites Ecoles de Port-Royal des Champs, functioning from 1637 to 1660, are religious inspired, the pedagogical approach practiced implied a radical turnaround. Previously Latin got learned by immersion. Without ado the student found himself amidst books written in Latin of which he had to make the best of it. “Port-Royal” on the other hand saw language as a structure characterized by regularities. Providing knowledge of these was the stepping stone into their approach.<sup>200</sup> However language remains to be a gift of God the focus is on the function as an instrument based on the use of rules. The atmosphere in which operations start to be recognized finds introduction all be it rather bashful.

The next step is taken by Locke. Perceptions so he says are the basis for “simple ideas”. However for the complex one the workings of the mind are needed. Simple ideas are situated on the level of perceptions in direct contact with elements in the tangible and public world. Complex ideas reside in the ethereal

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<sup>196</sup> This opinion is also present in “The emergence of protolanguage”; Arbib & Bickerton, 2010:169.

<sup>197</sup> Cf of the LAD or language acquisition device suggested by Chomsky in the 60’s of previous century.

<sup>198</sup> See previous note. Pinker has made great effort to underpin Chomsky’s proposal from a biological perspective.

<sup>199</sup> Who, apart of some expert linguists, has ever heard about semantic grammar or cognitive linguistics, however very interesting approaches.

<sup>200</sup> Port-Royal broke with the practices accepted in the middle Ages. Grammar as a set of rules got already introduced by Yaska and Panini in India in the 6th and 5th century BCE; also in Hellenist period in Greece.

realms of the mind. Tooke takes a radical step further.<sup>201</sup> Complex ideas in his opinion do not come forth from the workings of the mind as Locke suggested, but *through manipulation of linguistic elements (!).* From a gift from God over a system following rules (Port-Royal) allowing to bring forth complex ideas (Locke, adapted by Tooke).

On the other side of the channel Etienne Bonnot de Condillac suggests that signs are becoming associated with perceptions which subsequently are stored in the mind.<sup>202</sup> He continuous argues that the manipulation of those signs allows to revive in the mind stored content (sic). A depiction of language emerges as a system of means prone to manipulation an act which in the end can bring forth thought.<sup>203</sup> Operations of that type are even able to render extremely complex orderings of which Linnaeus system provides a prototypical example.

Then Wilhelm von Humboldt enters the scene.<sup>204</sup> According to that scholar man is in a quite natural way provided with language, somewhat similar as walking or taking a breath. A remarkable view which reminds of language as a gift of God. But he makes an observation which is particularly relevant here. "Just as it is a general law of man's existence in the world, that he can project nothing from himself that does not at once becomes a thing that reacts upon him and conditions his further creation, so sound (speech) also modifies in its turn the outlook and procedure of the inner linguistic sense (*to be understood as an ability*)."<sup>205</sup> (italic added) This provokes the picture of language in the form of perceivable speech affecting the speaker himself and by this reciprocal turn changes the processes and operations which produced the original statement. This exposes a feedback loop. He further stresses that the mind has need of sounds allowing to distinguish, to compare and combine the different items present in the environment.

This position is a convincing example of linguistic determinism. In that view language objectifies elements or aspects of events and with it brings forth distinguishable entities of physical and of conceptual nature which subsequently are prone to manipulation. In more concrete terms it comes down to the fact that sounds are observable entities/objects which can become associated with experiences related to aspects present in the immediate environment. Manipulation of these objects or means allows to manipulate experiences in turn. In short: the manipulation of sound-objects allows manipulation of experiences. This expresses a point of view which without much hesitation can be said to be behaviourist or operational.

What has been suggested so far announces already the scheme which around seventy years later will become introduced by the French linguist de Saussure. He is the one referring to "le signifiée et le signifiant" (the signified and the signifier)<sup>206</sup>

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<sup>201</sup> Locke neither Tooke can be identified with one single function. The first is well known as a philosopher but Tooke is an unknown character for many. Son of a poultry breeder he succeeds to study at Eton and later at Cambridge where he focuses on philology. Like all intellectuals in that period he had a broad field of interest among other subject knowledge and the function of language.

<sup>202</sup> A French cleric and philosopher, passed away in 1780.

<sup>203</sup> For recent views in that direction: Bronowski & Bellugi (1970); Kitihara-Frish (1978; Falk (1980): Holloway (1968), Lieberman (1975); Montagu (1976)

<sup>204</sup> Not to be confused with his brother Alexander who as an explorer-naturalist is better known by the public.

<sup>205</sup> Mentioned in Harris & Taylor, 1997, Linguistic Thoughts, vol. 1: p.171.

<sup>206</sup> If not familiar with this naming in case of the signified think of "tree" as a meaningful content and of "signifier" as referring to the sound of the word. The word "tree" in itself does not have a meaning of tree whatsoever. It refers to the sound but that in turn triggers the meaningful content and brings it to life.

Summarized, this approach outlines that manipulations of objects provoke an experience of displacement. Further manipulation allows in the experience the composition of complex scenes, also called versions, storylines or discourses.

Under pressure of the mainstream thinking whereby language is considered as ability, this actual proposal disappeared into the folds of oblivion. The references cited show it is not a product of fantasy. At the same time it illustrates that is quasi impossible to present an idea which has not been thought already in history.

## 6. The core of displacement

Displacement received quite some attention for obvious reasons. Without that effect of an operation, other features distinguishing the human from all other animals would be unthinkable. Schematized the development can be represented as consecutive steps in that sense that the first step is the necessary condition for the second – not as an unavoidable but as a contingent possibility.

### *Development into technical skilled hominid*

#### *Objectification*

The ability to recognize and distinguish formal characteristics related to handling results in stable input configurations. Still subject to Gestalt principles it consolidated into a particular pattern.

#### *Two stages of development*

1. a concrete manipulation fo a particular form (hand – silex nodule)
2. formal characteristics generalized in the act of seeing/motor

#### *Characteristics:*

- stance of distance taking
- judging, considering

Objectification is merely a name referring to the reorganization of input in the perception following from the action supporting handling of means. It all starts in a particular situation which, by repetition spread over a window of time, provokes a sensibility for relevant formal characteristics. By this a pattern of perception selecting relevant features out of the environment is taking firmly form and becomes consolidated. This eventually results into the environment becoming seen as a set of manipulable units.

### *Stepping stone into human characteristics*

'Object' as the result of a perceptive cognitive reorganisation allows association of a secundary meaning. As such it is the necessary condition for the composition of narratives

#### *Transition*

Storylines / narratives become the source of interpretation/meaning and break being bound to the actual and the local.

The **core** is the execution of manipulation supported by the use of means/objects. This pattern of mediated manipulation remains basic, whatever the degree of sophistication in the construction of the supporting tools and applications.

#### *Characteristics of the experience following from the transition*

- mixture with and equalization of a direct way of giving meaning and the mode provided by displacement result into the construction of one world experienced.

- the stance of taking a distance going with objectification and displacement on the basis of association result in a attribution of meaning, virtual in character

## 7. The aspect of complexity

It is widely accepted that trivial operations such as mentioned in no case could suffice in the realization of the abilities characteristic for the human. Probably the idea of a mind bringing forth mental processes - a heritage with a historic provenance, plays an important role for holding that conviction.<sup>207</sup>

But why should there be a mysterious cause setting man apart from all other species? For Darwin man was a species amongst species and Richard Leaky went so far to formulate it in a quite confronting way: man is an ape... doing things differently.<sup>208</sup> It could be disputed if this position actually can be sustained and if so to what degree. But such a discussion overlooks, even conceals a fundamental rule: whatever the cause underlying a change in the morphology of an organism, it is exactly that form which has to proof viability in real life situations.<sup>209</sup> The second part of Leaky's quote refers to a particular way developed in the human in order to deal with the burdens of the environment. Following the previous statement about the viability in real life, that particular way has to be subject available for observation in the public scene. Again, for what good reasons should there be mysterious forces involved? The answer often is: it is all too complex.

However the following is not really fitting the subject of this contribution, I can't stop myself briefly to react on a knockdown argument like that.

From the point of view of the observer in order to be called complex different elements must be present and all the elements must be in some form of relation. That presupposes the perception of stable elements hence objectification. For an encultured individual of the human species, acknowledging and identifying objects a scene can be complex indeed. On the other hand for an organism that is getting observed but responds to a situation in a pure relation regulatory manner (think of a fox or an earthworm), complexity as a qualification of a situation does not even exist. A difference in intensity can be experienced (a hungry versus a fox just eaten a prey) but not a qualification of complexity. In short, complexity is not a qualification existing as a natural thing but always a qualification from a certain – human – point of view. Of importance for the actual context: the *perspective* whereby input is configured into stable units subsequently seen in a relation one to another is a necessary condition.

Once that type of organizing input or objectification is in place exerting manipulation onto those units comes within reach. These units in question are not just so units. They are configurations of physical nature associated with a meaning.<sup>210</sup> In so far the latter is taken in the form of a neural configuration when activated provoking an experience, then this too is material in nature. In that sense a "signified"

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<sup>207</sup> For an elaboration on the history: Gilbert, J. The 5th Ape, in particular chapter 19 *Script*.

<sup>208</sup> The idea of man being an ape is contested. Some agree that the last common ancestor is an ape and that the chimpanzee is but man is definitely not. I have no problem with the idea. As a matter of fact it does not matter much apart of these cladists following the strict rule in ordering species.

<sup>209</sup> Cf Ernst Mayer, a leading biologist.

<sup>210</sup> It is actually the most basic meaning responsible for them to become considered as units. A nodule without the meaning of a hammer for an eventual user evaporates into a background chaos.

(signifiée) not only possesses a conceptual dimension but also a material.<sup>211</sup> Concretely presented it is about the manipulation of a material object (sign), the activation of neural configurations provoking a particular – and by this meaningful – condition in the experience of the subject. It has to be added that in the end displacement plays an important role but the point here is that the human type of displacement i.e. initiated by the subject himself, not even could be thought of in the absence of a stable configuration in the perception, in short: objectification.

So the qualification happens on the level of distinguishable units or objects. These are imbedded in a manipulation which in the most simple form will be nothing else than the hand holding the object or manipulating it. There is nothing spectacular in that, it occurs in chimpanzees too, moreover the manipulation they execute is not a just so fiddling but shows a particular ordered dynamic. There is the holding and the executing hand, the use of multiple means in a certain relationship such as hammer and anvil. This – recall: behaviour of chimpanzees – in its own right already extends the possibilities in more than one dimension. In first instance it improves the resistance of the hammering hand. Further the hardness of the nodule protects the more vulnerable skin and avoids pain. The mass is augmented improving the striking power. And, new sources of food come available (the content of a nut, bone marrow...).

But in spite of these acquired profits one can't get around the fact this is a particular situation. There is no generalization of the type present in the human.<sup>212</sup> It probably could find explanation as follows.

In the development of language there is a stage coined holophrastic. It refers to a type of expression whereby expression, manipulation, experience and name collapse into one. Think of a curse for instance. The intention is not the attribution of a name but expressing the totality of the experience at that moment. Köhler researched the behaviour of primates. He considers the handling of tools by apes as incorporated, as embodied. The nodule serving as a hammer is not a thing in its own right but like in the case of a holophrase it is part of an all encompassing dynamic. In the development which would result in the human the hammer is becoming perceived as a unit in its own right.<sup>213</sup> At this point the being bound to a situation and heteronomously determined by it is in transition into the condition of "openness" allowing different alternatives to be explored.<sup>214</sup>

There is already a degree of complexity with objectification as catalyst, which moreover frees from being bound to the actual and local. This is the core. Once that is firmly installed an almost endless acreage of possibilities lies in front, but always within the framework of mediated manipulation. By way of illustration take the following contemporary example. The experience following from the use of internet

<sup>211</sup> See also P. Greenfield stating that there is correspondence between the development on ontogenetic level (education) of the combinatorial organisation in language and the manual combination of tools. This should rather be considered homologue than analogue i.e. variations on the same basic dynamic. (in Language, Tools and Brain, 1991. *Brain and Behavioral Sciences*). Vilnyur Ramachandran too points out a correspondence between the sequence in simple actions such as cracking a nut and the sequencing present in sentences subject – verb – the direct object. (in The Tell-Tale brain, 2011-149) On the level of practice the minimalist program suggested by Chomsky et al. (2002) comes to mind. It refers to merging, bifurcation and nesting (chinese boxes), each of these actually quite simple and no problematic in nature.

<sup>212</sup> Shumaker et al. conclude that apes do a) not use tools to make tools, b) make tools individually never in cooperation, c) the tools are not combined in a meta-tool and d) the power of the tools is uniquely based on gravity. (Shumaker, R.W., Walkup, K.R., Beck, B.B. 2011. *Animal Tool Behavior*. John Hopkins University Press.

<sup>213</sup> This is actually the central hypothesis that I think I am allowed to conclude after studying the features of early stone tools. With data from animal psychology in the background there must have occurred a transition from the stage in which the Umwelt got presented as an event into the stage the Umwelt took the form of a set of manipulable entities.

<sup>214</sup> This does not suggest that an intention to explore precedes the action but precisely the inverse: from "playful" trial and error in which coincidence as determining factor plays a role of importance new possibilities find introduction. "Openness" has also to be understood in the same context, not as a perspective without an end, but by exploring the different possibilities which lie observable in front. The ability to distinguish different possibilities follows from the introduction of objectification in the perception.

access and the different modes of multimedia, computer animation, teleconferences with people all over the world is based on the use of only two distinguishable conditions – on and off – translated into one and zero implemented in a decision taking procedure or circuit.<sup>215</sup> This gives an idea of the explosive amount of possibilities based on the manipulation – a certain system or logic – of discrete units. The example of a piano has been given earlier: the skilful manipulation of eighty eight keys brings forth an audible spectacle bringing full theatres into delight, an experience which seems to stand far off the bare manipulation. On the number of discrete units the following provides interesting information. An eighteen month old child can handle fifty words which actually are discrete units material in nature i.e. air brought into vibration by the action breath and mouth. At twenty four months this amount quadrupled. Fours years of age it can master one thousand five hundred units culminating to two thousand five hundred two years later. An adult is able to deal with between twenty seven and forty two thousand units. Take further into account that each and every selection of units brings forth another unit which in turn allows combination into new meaningful entities again. A well-read Chinese adult masters about seven thousand ideograms; the same number of hieroglyphs present at the peak of the Egyptian culture.

To be stressed again: it concerns units prone to manipulation. They not only have a proper or first line meaning but combined – in a particular sequence or hierarchy, they open the path to create a deluge of new meaningful configurations. Moreover these entities also have a particular function. Some refer to an activity, others to stable units; others again refer to or indicate a possession, still other express a relation in kinship or positions in space and time.<sup>216</sup>

All these possibilities and elements could not be thought of in the absence of entities configured in perception.

Concluding, complexity is a quality or an appreciation based on the occurrence of discrete units onto which manipulation is getting applied.<sup>217</sup> No ethereal sources have to be assumed.

#### *Recapitulation: in a nutshell, the abilities so far*

This is a good moment to check on how by the execution of operations effects can be brought into being in so far the basic conditions have been satisfied. That refers to anatomic adaptations being in place followed by the necessary educational pressure, both implicit and explicit.

This summary has two parts. The first explains the reasoning or the perspective on the subject. The second will take the form of a scheme offering an overview of the relevant topics.

As reminder: the hook-in point is the observation that the tools attributed to the human line testify a type of processing and adaptation absent in the tools of other species.

The theoretical background takes the following form:

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<sup>215</sup> As an anecdote on how recent this all is: recall that the first computers date from the 1940's, the first home computer from the 1980's, Macintosh 1984, first Windows OS 1985, access to www midst of the 90'. While it feels like it existed for ever.

<sup>216</sup> For an elaboration on this, The Forgotten Transition, sub From tool in general to language in particular.

<sup>217</sup> For a striking illustration of the ability to operationalize complex movements the body intuitively make and by this transcends the level of rational control <https://www.bostondynamics.com>, in particular, <https://www.youtube.com/watch?v=fn3KWM1kuAw>. Without the translation of these movements into operations the effect demonstrated would not have been possible.

### *The basic overall pattern*

An organism, any organism can not be anything else than a product of a specific environment (ecology).<sup>218</sup> This instantiates the conditions of possibility; the organism follows from these conditions.<sup>219</sup> Given the same general conditions, the particular morphology and way of operating is defined by local parameters and coincidence.

### **The mission**

All living organisms strive to survive<sup>220</sup>. This is the basic motivation or mission shared by all. (1)

### **How**

The specific abilities following from the form and workings of the body determine the way the world will be understood and approached. (2) The world of the earthworm is different from that of the air-born bird. That principle counts for all living creatures.

Under the pressure of the circumstances the species which in the end will be coined as human developed a particular way interpreting and negotiating. (3)

(3) is imbedded in (1); in this man is not different from the other non human animals. It implies that in the cases where for animals mental features are not to be assumed this also holds for the human. The human realisations are based on nothing else than a different way of interpretation and negotiation of the Umwelt, actions taken in the public hence observable space.

[Mainstream thought assumes an essence functioning like source hidden deep within. It is responsible for bringing forth the features apparently unique to man. This idea originates from the old Greek effort to answer the question “what is that – that what is” (*ti esti ti*) after “that what (invariable) is” (*hoti esti*) had been introduced by this suppressing the direct articulation of existence.<sup>221</sup> ]

(4) The scene consists of behaviour taking the form of operations which can be observed allowing description. It opens the possibility to reverse engineering coming down to investigate and suggest types of activity having to be performed in order to bring forth the effect which has been observed in the first place.

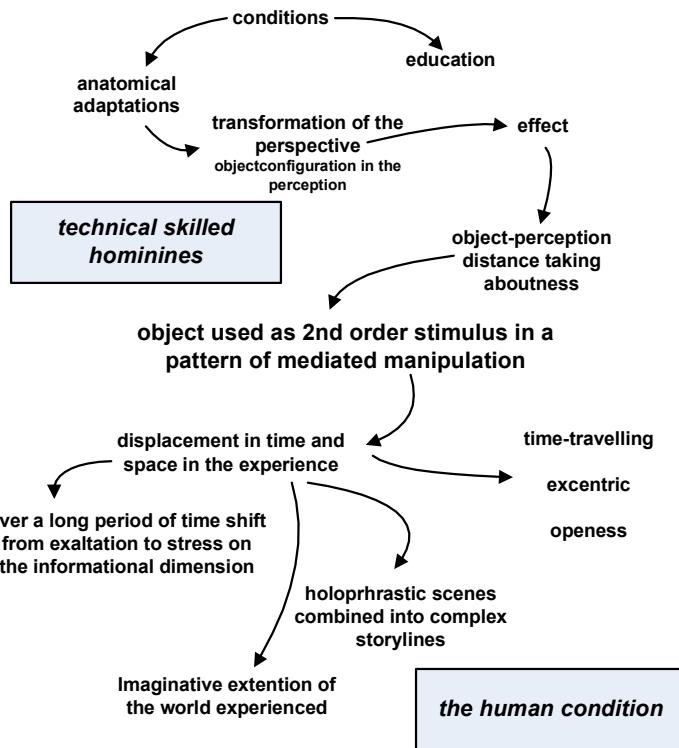
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<sup>218</sup> Organism refers to an integrated system, by Darwin called grow-correlations.

<sup>219</sup> For instance breathing animals can only be thought of in an environment holding oxygen a substance only appearing at a certain moment in the history of earth. Hence breath taking animals follow from this condition of possibility.

<sup>220</sup> Reference made to the final paragraph in “The Origin of Species”

<sup>221</sup> For an elaboration on the different types of objectification, one situated in phylogenetic perspective the other in Western history, see The 5th ape, chapter 5: *More than one object*.



## Clarification

Character of animal perception

- iconic
- monist, holist, unity
- direct, intertwined, dynamic
- fundamental drive is to survive

The catalyst

- mediated manipulation transforming the animal way of perceiving into...

The typical way of perceiving by a human

- the “world” as a set of manipulable units i.e. objects
- consideration of these units instead of intertwinement
- taking a distance and aboutness in relation to that which is subject of consideration, there is a perspective of distance experienced and it is about something (the hammer-stone, the prey...)
- the drive to survive gets embraced by a technical way of approaching i.e. the stance takes the form of quest: how could an actor performing mediated action realise the intermediate and the final drives?

= This results in an organism technical (better) skilled than the species most akin. The general stance consists of negotiating the environment making use of implements. This goes with a type of perception characterized by taking distance. This is not a feature added to the action taken but being part of it. In

the same way the nodule of silex became perceived *there* in front of the worker, the world as a set of manipulable units becomes perceived as being *over there* in front of the human driven to negotiate.

- The tool with its original function as primary meaning is becoming associated with a particular situation obtaining a secondary meaning. Presentation of the tool provokes reactivation of the secondary meaning.
- In the experience it at first involuntary and later intentionally transcends the condition of being bound to the local and the actual.
- Scenes brought into the experience this way allow serial and hierarchical organisation resulting into ever more complex storylines (discourse).
- These are all quite unproblematic operations provoking complex scenes in the experience taking the form of imagination.
- A resurgence of this kind is an encompassing experience taking away the organism. At the core is a reference to something and as such it is also informative. Precisely that proves to be quite useful stimulating further exploitation.

#### Displacement as cornerstone

As soon as acknowledgement and identification of object patterns has been installed through a process of education and objects are getting associated to secondary meanings, manipulation of the object in function of a 2<sup>nd</sup> order stimulus results in the manipulation of the meaning associated, by this in the experience transcending the local and the actual.

Worded somewhat differently, concrete operations in which the use of means are involved extend the experience and allow to transfer information characterized by declaration (it is about something). These implements are the forerunners of what will become stereotyped signs. Concluding that displacement is the cornerstone for further development is justified because it opens abilities and effects not present in the behaviour of other animals.

The actual realisation of this is unproblematic i.e. not shrouded in mystery.



## **2.Theory of Mind (ToM)**

There exists a vast amount of publications on this subject.<sup>222</sup> The aim of this part is quite modest. It only wants to offer elements relevant as background for the subject discussed i.e. how to realize a ToM in an actual situation?

Having access to the mental content of others, gauging what their intentions and moods are, in the literature it is getting presented as an ability, a cognitive not to say mental agility. This confers with the original definition offered by Premack and Woodruff in 1978 “In saying that an individual has a theory of mind, we mean that the individual imputes mental states to himself and others”.<sup>223</sup>

The present clarification will take the form of few remarks which as pieces of a puzzle will support the core of the thesis i.e. that the realisation rests on the manipulation of objects in function as stimuli of 2<sup>nd</sup> order handled in the public arena.

### *1. A conclusion with a hidden assumption*

Research programs executed by Savage-Rumbaugh et al. (1978), Povinelli et al. (1994,1996, 2000), Tomasello (1996), Theal et al. (1999), Call & Tomasello (1999) and Heyes (1998) to name some all reach similar conclusions. Chimpanzees and other non human primates do not understand the psychic condition of others. The predictions they make are based on past experience (and maybe to specialized cognitive adaptations), but they do not transcend the threshold of understanding goals, knowledge, perception and beliefs as motive to action neither do they have a clue about the underlying physical forces.

This conclusion is remarkable to say the least. However it agrees with the body of accepted knowledge on closer inspection it exposes a particular perspective so familiar that it is overlooked completely. “It is time to divorce from the conviction that reaction of animals most akin only would be motivated by perception of behaviour executed and observable in the open”. This idea is in one or another form present in the publications of different authors. It suggests that there is more than the observable in play which brings forth answering behaviour. That “more” hints in the direction of something present in the human. The mental referred to by Premack and Woodruff takes hesitatingly form. It is not present in the primates in a full-blown manner yet but irrefutable in a somewhat premature form. It all starts, thus goes the argumentation, with the observation of the other as is the case for the human but... it does not end there. The final data show that chimpanzees understand goals and intention of conspecifics.

Formulations like this conceal a tacit assumption: humans possess abilities transcending what is observable in the open.

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<sup>222</sup> To name only a few examples: Premack, D., Woodruff, G. 1978. Does the chimpanzee have a theory of mind? *Brain and Behavioral Sciences*. p. 515. Baron Cohen, S. 1999. Evolution of a theory of mind. In Corballis, M. & Lea, S. (eds) *The Descent of Mind*. Oxford University Press. Call, K. & Tomasello, M. 2008. Does the chimpanzee have a theory of mind? 30 years later. *Trends in Cognitive Sciences*. Vol. 12, Nr. 5:187. Meltzoff, A.N. 2013. Origins of theory of mind, cognition and communication. *Journal of Communication Disorders*. 32(4):251-69.

<sup>223</sup> The question is actually a by-product of a research with a different goal. The authors wanted to find out if chimpanzees were capable to understand human goals.

At this point some caution is in order. What does the last sentence actually mean? Does it refer to an operation provoking an effect of which the result is more than the sum of the distinguishable partial operations? Or does it refer to a mental capacity (Premack & Woodruff), a mind like or neural activity giving rise to supervening effects?

Shorter: man disposes of particular abilities such as ToM, other primates don't but they too have something transcending pure behaviour.

The sting lurks in the implicit suggestion that man possesses of abilities transcending what can be achieved by behaviour. In short, it is not as much the idea that the chimpanzee does not dispose or only partial of an ability of that kind, but that without question the human does. Mind-like or mental abilities are accepted without any form of restraint. But is that really the case? Could it not be that effects are getting experienced for which there is no explanation ready at hand in the register of the mainstream thinking and, following Goethe "denn eben wo Begriffe fehlen, Da stelt ein Wort zu rechten Zeit sich ein" in that case the "mental"?<sup>224</sup>

## 2. The rich possibilities of implicit heuristics

"Mensch is Weltbildend, das Tier is Weltarm". That is how Heidegger sees it in "Die Grundbegriffe der Metaphysiek". It suggests that man partakes in a rich experience of the world while that of an animal is rather meagre.<sup>225</sup>

However there is a very different point of view in ethology, artificial intelligence and in the construction of robotics.

On the basis of her research Shettleworth professor of psychology at the University of Toronto concludes that simple processes which in first instance have nothing to do with explicit reasoning which is considered to be sophisticated, are able to realise complex tasks.<sup>226</sup> This has been convincingly been confirmed by Alex Taylor working at the University of Auckland with Caledonian crows.<sup>227</sup> The bird succeeds to solve a problem requiring eight procedural steps to be performed in a particular order. Research in the field of minimal cognition goes even further. Audrey Dussutour etologist studying ants and one celled organisms reports on the behaviour of Physarum Polycephalum a slime mold like creature. It is able to find the proper food hence making choices, able to find the shortest path to food, able to retain information and even to learn.<sup>228</sup>

The, at the same time trivial but also remarkable fact is that food in all cases is the crucial motivating factor. This stimulus which hooks directly in the primary motivation seems to be the linchpin in experiments with animals, even in the case of the slime mold. But setting this fact apart, Taylor's crow

<sup>224</sup> Translated free "when an experience for which no name exists occurs, spontaneously a word will pop up". The quote is expressed by Mephistopheles in Faust, der Tragedie, first part. Quite interesting Whitehead adds to that as soon there is a name it is assumed that it refers to something really existing (the fallacy of misplaced concreteness).

<sup>225</sup> I have to admit that I use the quote in a rather opportune way. Heidegger might most probably have some other meaning in mind when writing this.

<sup>226</sup> Shettleworth, S. 2010. Clever animals and killjoy explanations in comparative psychology. Elsevier: *Trends in Cognitive Science*. Recall also what has been said earlier about complexity.

<sup>227</sup> Documentary film from BBC Scotland, *Inside the Animal Mind*, part 2 on 4 minutes. via <https://www.dailymotion.com/video/x1mwz57> of <https://www.youtube.com/watch?v=AVaITA7eBZE>

<sup>228</sup> It learns to appreciate salt which in origin it does not like in order to reach the food preferred. It is even able to transfer that information – or should I rather speak of condition – to another collective from the same type.

succeeds in solving the task while it would be highly improbable to attribute the use of symbols as placeholders in extended memory - which would be assumed for this type of task - to this animal.

It has been mentioned that the manipulation of tools implies a particular system or logic. The crow in this example testifies of a far reaching development in this. The psychologist Gerd Gigerenzer stresses in "Simple heuristics that make us smart" the possibilities of the simple.<sup>229</sup> Many decisions are generated by quick and dirty heuristics making derivations from scarce information. This does not only illustrate that simple elements can bring forth complex behaviour but it shows a rather important problem solving capacity. (1999:6)

Hans Moravec a mathematician engaged in the development of robots observes that movements based on implicit procedures are the most difficult to mimic. By this he expresses that a) implicit procedures are of a more difficult level than those which are explicitly formulated and, b) that the former are proper to animals stripping them from the qualification of being dumb behaviouristic automatons.<sup>230</sup>

### 3. Practice in the public arena

There is a theory known as cognitive simulation. It is a competitor for the suggestion that the human possesses a mental module allowing to gauge the mental states of others. "We enact the activities of others through processes of perspective taking and shifting" according to the cognitive psychologist Brian MacWhinney. (2002:235)<sup>231</sup>

The following ideas seem to confirm it.

a) In 1936 Herbert Blumer suggests that the relation to elements in the environment is based on the meaning these elements have for the concerned, a meaning originating from the interaction with others. The element acquires full meaning in the interaction with it. (1969:3)<sup>232</sup> It stresses the interaction in the public arena whereby observation of what the other says and does takes a key role. It is precisely through education imposed by others, consequently the opinions and beliefs of others, that the image of the self takes form. Trivial example: a child continuously criticized will in the end hold a self-image of low esteem. This dynamic however works in both directions: the behaviour of others will be judged likewise. This suggestion is relevant for the idea of a ToM.

- Blumer's suggestion reminded me of what Wittgenstein suggested on the attribution of meaning to the behaviour of others. He argues that it is necessary, making use of a set of rules, to relate language to behaviour expressed by the other in order to fathom the content of his ideas. Failing leads to the feeling not being able to put ourselves in the place of the other. (1953, part 2). Rules are part and parcel of interaction. This again focuses on the real life practice in the public arena. What Wittgenstein refers to is part of what he coined "Lebensform". This refers to the whole of knowledge, customs and engrained

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<sup>229</sup> Gigerenzer, G., Todd, P.M. and the ABC Research Group. 1999. *Simple heuristics that make us smart*. Oxford University Press.

<sup>230</sup> Moravec, H.P. Robotics Institute Carnegie Hall Mellon University, Pittsburgh, USA. Moravec's paradox: rational reasoning requires little computational effort, sensorimotor on the other hand an enormous quantity. See also Rodney Brooks, Marvin Minsky and Luc Steels.

<sup>231</sup> The suggestion of understanding by enactment can also be found in publications of Barsalou. Barsalou, L.W. 2003. Situated simulation in the human conceptual system. *Language and Cognitive Processes*. 18; 513-562. Barsalou, L.W. 2009. Simulation, situated conceptualization and prediction. *Philosophica Transactions of the Royal Society of London; B: Biological Sciences*. 365, 1281-1289.

<sup>232</sup> Blumer, H. 1969. *Symbolic Interactionism: perspective and method*. Englewood Cliffs, NJ: Prentice Hall. For a good introduction reference made to Fink, E.L. Symbolic Interactionism. Chapter in *The International Encyclopedia of Interpersonal Communication*. 2015/2016. John Wiley & Sons.

actions providing a group of people a culture. (Eijzenga, 1996:279)<sup>233</sup> What is the impact of the suggested? Suppose a leg appears from behind a screen. Based on what is known of the human it will be obvious what is hidden behind the screen (a knee, a thigh, by its form suggesting a man or a woman, a child or an adult etc.) A child does not grow up in a vacuum but in an environment defined by common knowledge, opinions, beliefs and attitudes kneading the child into the “Lebensform” proper to that culture. It instantiates the identity of the individual as a part of a particular group. Implying that observing members of that group, the shared “Lebensform” provides information on their behaviour but also reciprocal amongst them. It can easily be experienced when looking at people living far away, understanding escapes us a condition rarely the case in relation to members of the home group.<sup>234</sup> That it is a type of active understanding escapes us because it precisely is our identity by this taking the guise as if all behaviour is natural.

- It fits the approach of Alison Gopnik, professor of psychology at the University of Berkeley. (1993) In respect to the own mental state falling back on the same theoretical framework the same kind of deduction is being made as in the case of making deductions on the mental states of others. Also here there is no mention of a mysterious internal cause allowing to peek into the soul of the other. Here too the experience in real life situations in the public arena is the source providing understanding.

On closer inspection this agrees with the behaviour of the species most akin. Chimpanzees move on the level of the public arena where they can infer the presence of food from the behaviour of members of the group. But they do not transcend into another level in order to understand goals, knowledge and the content of perception of conspecifics.<sup>235</sup>

- Vygotsky's approach of inner speech or endophasy is also of relevance. It arises from learning to speak in the interaction with others gradually obtaining an inner guise (metaphor) or a silenced mode. (1934/1986). Inner speech as a phenomenon became measurable by the procedure tested and described by Sokolov in 1972. As a note in the margin, the idea of an inner voice started to take form in the Middle Ages with the introduction of silent reading.<sup>236</sup> An increasing self control forced upon by the scaling up of urbanisation in turn implying new ways of production requiring division of skilled labour, all this provided the larger context for the coming into being of the experience of possessing an inner personality, a private mind.<sup>237</sup>

- This way of thinking shows affinity with a project presented earlier by Gilbert Ryle in “The Concept of Mind” offering an alternative approach for the Cartesian point of view on the mind. This author proposes

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<sup>233</sup> “Lebensform or form of life has been mentioned in Philosophical Investigations and again in On Certainty. For the interested the reference mentioned to Eijzenga is recommendable as it offers an overview of the different interpretations present in the literature.

<sup>234</sup> “Lebensform” is here understood as the identity providing framework of a Group. The idea could however be taken to a much broader level: the whole of the Western culture inspired by the thematising by the Greeks. And for the same reason as explained on the level of the Group, we do not see it. It became as our collective and cultural identity self evident.

<sup>235</sup> Roberts, G. 1996. Why individual vigilance declines as the Group size increases. *Animal Behaviour*, 51, 1077-1086. And further: Call, J., Tomasello, M. 2008. Does the chimpanzee have a theory of mind? 30 years later. *Cell Press*, Elsevier. In the same line of thinking: Call, J., Tomasello, M. Reasoning and Thinking in Non-human Primates. Chapter 25 in Holyoak & Morrison (eds.) 2005. *The Oxford Handbook of Reasoning and Thinking*.

<sup>236</sup> Saint Ambrose was suspected of sorcery because he was observed reading without a voice. Reading in the Middle Ages meant always reading aloud for the benefit of the illiterate in a public setting. Concerning the idea of an “inner” guise or inner World, Toulmin draws the attention to the fact the idea of an inner world found introduction in the transition of the 17th to the 18th century. It urges caution to understand the quality or locus of “inner” as a metaphor for the fact that it for a long time the phenomenon escaped the possibility of performing observations or measurements hence the suggestion in the direction of a (mental) ability. Toulmin, S. 1979. The inwardness of mental life. *Critical Inquiry*, vol. 6, no. 1, pp. 1-16.

<sup>237</sup> See the keystone publication by Elias, Norbert. 1939 (German)/1994 (translation). *The Civilization Process*. Blackwell. For a concised introduction, Gilbert, J.F.R. The 5th ape, chapter *Script* (ebook).

a description in terms of dispositions and acquired skills, a setting not in need of inner objects and events. The mind is not an intransitive thing. When carefully observing the formulations in which the mind is discussed it in the end always shows that it is about behaviour. And, the formulations I (Ryle) make about myself are quite similar to the type of formulations made about the behaviour of others (1965:155).

- I would like to round up this brief overview of illustrations by drawing the attention to the conclusion of the research project executed by Gweon et al. (2011). They pretend to offer the first attempt to compare directly different ways of attributing opinions and beliefs to one self and to others. The exercise is based on neuronal as well as data derived from psychological investigation. From their point of view this approach provides a sounder empirical bases compared to other projects with the same goal. What is the conclusion of the research?

The neural activity shows that when asked to think about the beliefs they personally hold, it are the same neural networks used for the application of so called ToM in the case they think of the mental states of others.

Taking into account Vygotsky's argument that internal - considered to be mental - processes are interiorizations of observations and interactions originally executed in the relation with others then the conclusion can be summarized as follows:

- What is called a ToM originates in the inter-action in a real life scene in the public arena;
- it follows from the observation and description
- and involves enactment resulting into an understanding (Barsalou).

Hence it is not the result of an internal – so called mental – process that as a crystal ball squirts understanding subsequently projected on the (behaviour of) the other.

Adding the following two factors will bring forth a difficult to refute conviction.

Factor A: not completely unprepared

In most of the cases an organism experiencing a disturbance in the environment is not abruptly confronted with a whole new and unknown occasion. The limbic system (hippocampus, amygdale, hypothalamus, thalamus and cingulated cortex) allows evaluation of the situation and initiating answering motor behaviour. If this then is the best of reactions is not the issue here. So a basic set of strategies ready at hand may be assumed. Besides that most animals go through a period of learning from the parents or the troupe. In third instance real life experience adds to the body of (implicit) knowledge.<sup>238</sup> Cutting corners, the organism does not come totally unprepared in most of the situations. All this contributes to the formation of heuristics and strategies which Shettleworth refers to and elevates the animal far above a 1-0 choosing automaton.

Factor B: the mental a product of a historical narrative

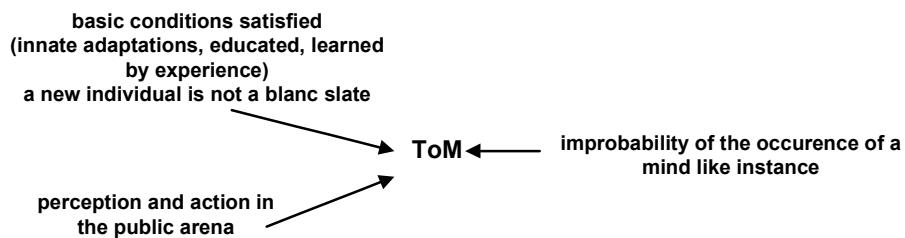
The theme central in this discussion, ToM, is the conceptualization of experienced effects. It is about being able to read the behaviour of other people, putting oneself in the place of the other. In the first part sub “Explaining and understanding” the character of a concept and of an ability was at stake. This was not about an instance, intransitive in nature, having an existence somewhere in the body, but about

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<sup>238</sup> For a similar but a more elaborate model: the tower of generate and test, chapter 13, p.369 in Dennett, D. 1995. *Darwin's Dangerous Idea*. Penguin Books.

models allowing to grasp some phenomenon. Remarkably the whole idea of a ToM did not appear in the literature before 1978. Stronger still the very idea of a mind like instance came only in existence very gradually.<sup>239</sup>

In short, the question if there really is something like a mind is justified. Is it a concept, recall the quote by Goethe, might it after all be no more than some fabrication to refer to a type of experience for which there is no clear explanation yet?



#### 4. The ballet

Ballet dancing can be understood as the combination of two parts. In first instance there is the basic posture and the set of possible movements shared with all humans moving around upright. Wanting to master a special register of movements in sport or in ballet requires a distinct education transcending the shared skill. That implies that each special movement will have to be demonstrated by an expert and observed and practiced by the novice. Every part will become a separate subject to be studied and as such objectified. In that quality it will be manipulated, observed, presented as a model, tried out, and exercised. No movement occurs by accident, there is some system involved. A “battement tendu” requires a different ordering than a “battement fondu”. The basic register is preserved, it becomes adapted and extended.

This illustration offers a scheme which is useful for understanding the actual subject.

An individual does not come as a blank sheet. He is provided with a basic register, a minimal arsenal heuristics, strategies, motor procedures etc. Further adaptation in the phylogenetic perspective and education in the human line offers supplementary perspectives such as the perception of stable configurations hand in glove going with new or improved motor skills. This is the first distinguishing step in the evolution resulting into the human condition. It could have ended here, the condition of a technical superior skilled ape.

However the development went on. Objects functioning as 2<sup>nd</sup> order of substituting stimuli allowed to introduce in the experience displacements in space and time by this transcending the condition of being bound to the here and now.

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<sup>239</sup> On this subject there are good books available. To name only two: Snell, b. 1953 in German/in translation 1983. *The discovery of the mind*. New York: Dover Publications and Onians, R.B. 1951. *The Origins of European Thought about the body, the mind, the soul, the World, time and fate*. Cambridge. For a brief introduction see Gilbert, J.F.R. 2021. Unveiling the mind, sub *What are we talking about?* in particular the second part *A brief history of the concept of mind in Western culture* (e-book). Also in the actual contribution a brief introduction about “Concepts with a historical origin”.

The point of importance here is that all these are unproblematic operations provoking effects transcending the trivial.

The whole of the process is circular and self-learning. With an increase in experience comes an increase in possibilities. On top of that, extra training increases the ability to explain and predict. A trained psychologist will be better than a non-specialist falling back on the use of a ToM.

At the core lay objectification and the possibilities opened by displacement.



### **3. Consciousness of the self**

"Self-consciousness can be understood as an awareness of oneself. But a self-conscious subject is not just aware of something that merely happens to be himself, as in the case one is when observing an old photograph *without* realising that it pictures himself. Rather a self-conscious subject is aware of themselves *as themselves*; it is manifest to them that they themselves are the object of awareness."  
(Lemma self-consciousness in Stanford Encyclopaedia of Philosophy, summer 2020 edition)

This description refers to different layers.

1. There is the level of knowing in relation to something, perceiving something.
2. Subsequently a feature (or cluster of features) perceived is later getting recognized on a picture.
3. What is recognized is a feature of the perceiver himself.

It is possible to relate this to the mechanism of knowledge by association provoking a displacement in the experience (reference to the chapter on displacement).

Suppose a nodule used to hammer. It derives its primary meaning from the action consisting of breaking the shell of nuts.<sup>240</sup> Suppose further that a predator got killed with it in an unexpected attack. Demonstrating that implement on a later occasion will most probably recall the event, the fear but also the courage of the user. In the accompanying experience a feature of the actor is brought under the attention. The observation of the tool will confront him with the fear and the courage felt. It instantiates a proto-form of recognizing oneself.

This representation agrees strikingly with Heidegger's "Dasein" (being there) a positioning contrasting with "sein". It expresses the relation to what is *there*, to what can be observed following from the act of holding in front of, of demonstrating in front of oneself. What is shown over there is not without meaning, it is recognized as being meaningful, in this particular context: courage as a feature of the actor.

The qualification proto-form needs some clarification. It does not imply 'less in quality' but earlier in the development. Abstract and stereotyped symbols, morphemes or graphemes, which we are familiar with, are the actual highest mode. But regardless the degree of development, the meaningful payload is the same: a recognition better still resurgence.

Suppose I pronounce the name of someone familiar. A meaningful content consisting of experiences with that person, image like features like wearing glasses of boldness, knowledge about family and social roles will appear.

From a technical point of view what difference would it make when referring to one self?

Might there be something missing? The only difference is that in the first case I know it is about something else and in the second referring to my-self. Is this a condition escaping the understanding?

Why should it? It is one instance of knowing that has another as subject.

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<sup>240</sup> The different levels of meaning have been mentioned earlier: 1) primary motivation makes something meaningful; 2) the characteristics and abilities of the body as determining factors; 3) the first meaning of an implement (scrapping hides for instance); 4) secondary meaning acquired by association; 5) meaning through projection (metaphor...) and 6) meaning by stipulation.

Even the suggestion that there might exist something like a type of knowing of higher as in the knowing that I know, is misleading.<sup>241</sup>

It suggests knowledge about knowledge, the first instance a somewhat magical mode above the common mode taking the as subject of scrutiny. While as a matter of fact the only thing changed is the predicate.

I know that I am able to *run long distance*.

I know that I am able to *know about myself*.

The activity of knowing remains what it is and it has a subject. That can be running but as well knowing. But in the appreciation we seem in the latter case to realize a special condition in that the knowing instance seems to transcend the activity of the common way of knowing while actually nothing special is being performed.

For this subject too it applies that an object in reach hence allowing to be manipulated and the object is associated with a secondary meaning, manipulation of the object provokes in the experience a revival of the circumstances which gave rise to the secondary meaning. It is of no importance in case the secondary meaning is referring to a third party whether to the actor himself.

It could be objected that a revival of that type not necessarily will become experienced as self referential. This argument cannot stand for long. It is the actor having killed the predator and as such the experience will be more laden than a just so reference to some scene. He will psychically felt caught by the presentation confronting him. It is not improbable that in that type of experience the very first signs of self-awareness arise. But, once the experience shifts from pure exaltation in the direction of a growing attention of the informational component the character of the experience becomes ever more cognitive in kind.<sup>242</sup>

Here too objectification imbedded in the process of mediated manipulation in the experience giving rise to a displacement in time and space is the necessary condition.

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<sup>241</sup> Rosenthal, D.M. 1990. Why are verbally expressed contents conscious? *Ziff Report*, nr. 32, Universität Bielefeld. In the same sphere: cogitatio (Descartes) and the attribution *sapiens sapiens* (paleoanthropology) also refer to a type of knowing about the knowledge it actually holds.

<sup>242</sup> For an elaboration on this: Gilbert, J.F.R. 2018. The Forgotten Transition. Chapter 2.3.3 *From Ecstasy to Information*.

#### **4. Generativity as the discriminating feature, Wallace's problem**

There is distinguishing feature that as far as I know never get discussed apart from clearly delineated subjects. In social oriented sciences for instance generativity refers to the inclination present in elderly people to share something with the younger generations.<sup>243</sup> Early in the 21<sup>st</sup> century J.L. Zitran introduced the suggestion to use this term to refer to a characteristic of technology the latter seen as an ecosystem. He had informatics in mind in particular the condition in which new situations, products and behaviour came into being without intervention of the creator of the system. Cutting corners, once the system up and running it was observed to be generative i.e. maintaining itself. Think of what is becoming called self learning systems for instance.

The term is also getting applied in the domain of linguistics however there is disagreement. Chomsky to whom the term is often related would not have meant more than to express that a certain grammar was explicit. Followers of his paradigm took the idea of generativity further to refer to a grammar able to bring forth an infinite number of sentences. (Ney, 1993) In Hockett's and Altman's famous overview of design features productivity is also present referring to the ability to generate new sentences again and again with a limited set of elements. (1968)

Within the context of the actual discussion generativity will be understood as the occurrence of a quasi endless stream of possibilities in the endeavour to cope with the burdens imposed by the environment. Alfred Russell Wallace got stunned by it, not by the fact of the endless stream of possibilities in itself but by the fact that those possibilities transcended the needs rising from the mechanism of natural selection.<sup>244</sup>

What is this about?<sup>245</sup>

Organisms are closely connected to the circumstances surrounding. These could as well be called the conditions allowing an organism to come into being and to exist. An earthworm does not live ten meters above ground, a bird not deep under water. Changes in the environment require from the organisms extra efforts to survive. Take the classic example of the giraffe. Suppose trees starting to grow taller with this shifting foliage upwards too out of reach of the animals. Those already possessing the longest neck will survive. They will be the only individuals able to procreate while all the others will perish. This way the process of selection acts like a pruning filter. The theory of evolution by the mechanism of natural selection does not stimulate species to grow particular abilities – that is the line thinking proposed by Lamarck but only holds back these individuals already possessing a skill at least just enough to cope with

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<sup>243</sup> In that context the term is attributed to the psychoanalyst Erik Erikson.

<sup>244</sup> It seems common to attribute the theory of evolution by natural selection to Darwin mainly however Wallace suggested the same idea and wrote about it to Darwin. There were actually four or five creators of it. Besides Wallace there was also a publisher of bibles who understandably wished to remain anonymous and a grower and merchant in trees and plants. The theme of evolution was a hot item in that era, many scholars suggested ideas on that subject.

<sup>245</sup> For the interested reader Bickerton published an instructive book on what follows. Bickerton, D. 2014. *More than nature needs*. Harvard University Press.

the changed circumstances.<sup>246</sup> Hence, the so called adaptation is not an active but a passive out filtering process. In the example given it will only be the line of the giraffes already having the longest neck which will remain. This does not require initiative, the fact they do suffices. Furthermore, this adaptation is only restricted to a very particular problem, in this case the foliage shifting upwards.

### Wallace's problem

"Natural selection could only have endowed the savage with a brain a little superior to that of an ape whereas he possesses one very little inferior to that of an average member of our learned societies" (Wallace 1869: 204)<sup>247</sup>

So far the quote, what is actually the problem?

Man is a species amongst species hence subject to the same dynamic. It might be acceptable to assume that natural selection will provide the savage with a brain which is only slightly superior to that of an ape. Recall the example given of the giraffes already possessing a longer neck; in this case it is about humans being slightly more clever. But so Wallace observes, that savage testifies of possessing a brain which is not much less competent than the brain of modern educated people.

In other words the development of the human, savage or modern, does not fit more or less the same level the changes imposed by the ecology take, the possibilities demonstrated by the human transcend the new burdens to a large extent. Back to the giraffes: the selection does not show giraffes with a somewhat longer neck enabling to browse the foliage; they prove to be able to solve algebraic equations. It will be clear that this example only wants to illustrate the magnitude of the difference in development transcending the new needs in an exponential way.

This leap in development is exceptional. It does not occur in other species. That is the problem Wallace felt confronted with "How is it possible that an organ (brain/mind) underwent a change transcending the needs of the possessor of that organ?" (ibid. p.392)<sup>248</sup>

What has been presented as a problem in the previous paragraphs is actually a feature characterizing the human species. The interpretation of generativity offered by Zittran hits the nail on the head however he focussed on the domain of information technology. The technique underpinned by digitalizing, recall the efforts of Alan Turing, produced an ever increasing stream of abilities and applications transcending immediate needs.

The point deserving attention is that this kind of openness, this seemingly endless productivity only is possible through a situation which has been mentioned more than once in this contribution.

The dynamic characterizing the production generated by this technology is based on the imaginative construction of models. It is an activity commonly considered as an expression of creativity. On models

<sup>246</sup> Darwin suggested this mechanism but he did not understand how these achievements came into being. It would take forty more years before Hugo Devries published his ideas on mutations.

<sup>247</sup> Savage akin to primitive referred in the 19t century to preliterate. The appreciation of aboriginal people differed radically from views held by anthropologists nowadays.

<sup>248</sup> It is at this point that Wallace diverts from Darwin. This was a conundrum of such a magnitude that Wallace could not answer unless to accept divine intervention. The public attention is often focussed on this at the same time neglecting that most of his proposal concerned the mechanism of natural selection. In the meantime on the 24<sup>th</sup> of January 2013 his portrait is – rightfully - presented next to Darwin in the hall of the Museum of Natural History in London.

and modelling the following has to be observed. They are non-committal i.e. the application does not result in unconditional effects.<sup>249</sup> It is within reach to imagine a precarious enterprise however to remain spared from the risks going with it if at some point might go wrong. Secondly, a model is based on associations in particular these connected to other associations i.e. projections. That is to say that this falls back on quite simple patterns in the same sense a long division is making use of in principle simple tokens. The bottom-line is that there is nothing mysterious to it.

A model is a specific application of a displacement in space and time; an application making use of plural imaginative displacements by this allowing to build complex constructs. A displacement in the experience of this type cannot be realized without manipulable implements, objects.<sup>250</sup> Not to forget that the coming into being of the object-configuration in the relation to action supporting implements was accompanied by a stance of distance taking. Taken together it brings forth an encompassing experience in the form of an imaginative life-world in which endless combinations of displacement based scenes are becoming within reach.

In other words the life-world characterized by an open end is rooted in the presence of objectification in combination with the ability to – making use of associative connections – install displacements in the experience.

There is yet another factor contributing to generativity. In the development means are central. Originally this had one particular function, carving in a cadaver for instance. However the features inherent to an implement transcend the original use by this opening up new possibilities. Take a hammer-stone. It can also be used to throw at an enemy, stacking up to bring something within the reach of the hands, smash a bone to reach the marrow etc. The idea is that implements have characteristics seducing to novel forms of use and as such instantiate generativity.

But there is also a side which could be considered a cost in spite of the fact it commonly is experienced as profit. Each novel use opens new possibilities, new profit, and new comfort. A spear-thrower (atlatl) increases the reach, an advantage for the hunter. But at the same time it shifts the threshold only to be transcended by a still better combination of thrower and spear. It enlarges the possibilities at the same time initiating an internal logic to do better still. The arms race is a striking example but there are others closer to home. Think of the development of dirt road in the end becoming a highway improving the comfort of driving in turn of influence on the construction of automobiles which in turn again augment the demands of the road surface etc. Or take public forms of communication: by mouth, radio, television monochrome/625 lines, colour television, HD, full HD, 4K, 6K, 8K...

Properties of the implements used increase the possibilities. Habituation occurs and shifts the threshold of what is considered being the norm, being natural, in turn driving to further increase and broadening exploration. If this is a reprehensible dynamic is not relevant for the actual discussion. The aim here is only to point out this dynamic and its internal logic or drive.

The suggestion of an open end has a caveat.

It suggests two elements unified into one guise: 1) a horn of plenty, 2) at the same time suggesting that there is no end to it. It is precisely that second part that needs relativization.

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<sup>249</sup> The tower of generate and test has been mentioned earlier.

<sup>250</sup> "...of this type" refers to self initiated; as mentioned animals too experience displacements but always exited in a heteronomous way.

Take the following analogy.

Humans hold the feeling that existence is self-evident. Life is experienced as an absolute condition not to be confused with the temporality of it. Someday they will die; humans are aware of that fact. But when alive, they experience life in an unconditional way.

But actually life is not without conditions at all. Take the need of oxygen in order to breathe enabling life. Oxygen is so omnipresent and evident that it escapes awareness. There is no end to it. Think of water for fish, it does not seem to exist at all.

Until the fish is caught and lifted out of the water or the oxygen disappears in case of land-dwelling animals. Only then the conditions of existence become in sight.

So the endlessness is actual not endless at all.

The same is the case with generativity. It seems endless. Ingenuity seems to have no horizon.

But in the sense oxygen is not an absolute condition but subject to particular circumstances, the same is the case for the characteristic of generativity. It follows from a very definite kind of action i.e. the skills of manipulation. It allows particular applications to be introduced at the same time by its very logic or system confining the reach of what is possible.

The elimination of mediated manipulation would deprive the human of what characterizes him and reduces his guise to that of a hominid amongst hominids. That is the importance of it. It is the keystone for the human condition.

A last note, generativity is not a skill as the initiation of displacement is, it is a characteristic accompanying this type of skills.

## Conclusion

Abilities are said to be responsible for the particular character of man. He has a consciousness, a conscience, and an inner personality as if it were instances working silently nevertheless productively somewhere inside. It is a conviction present in Greek thinking where essences and potencies bring forth particular features like ethereal vapours. Recall Plato suggesting that ratio is the royal way to contemplate the true nature of things.<sup>251</sup> Ideas like these make out the basic understanding maybe silently but ever so present in the actual thinking.

This contribution took another vantage point.

Abilities demonstrated and effects experienced are getting presented as the products of actions executed in the cross section of existence, assumed that the proper anatomic adaptations are in place and cultural education has been imposed.

Language is often presented as the characteristic par excellence of the human condition. As the previous pages have shown, here another suggestion has been pushed forward. Time and again object-configuration seemed to be the linchpin. That factor however does not appear in isolation on a pedestal. It came and comes into being in the relation to means supporting action and since then it cannot be thought of divorced from that setting. It comes down to the fact that what the human distinguishes from all other animals is his specific way to deal with the burdens imposed by a dynamic environment: the use of the hands supported by means.

Once started as a specific activity, applying improvements to a silex nodule, provided the basic pattern finding application in every dimension of existence. Communication occurs through the execution of an action – speaking or writing – making use of means auditive or visual. The killing of animals and processing the carcasses into food, the whole chain of activities is organised around the use of action supporting implements. Animals become recruited as efficiency improving means to move around. Much later mechanical contraptions would take over that function. It too are tools moreover construed with the use of other tools often making use of natural forms of energy again taking the guise of a supporting element. Fire is a means serving to cook, to heat or as a weapon. As a matter of fact it only became mastered after being considered as some *thing* prone to manipulation. Wearing cloths is an activity making use of means in order to obtain a goal: reassuring a comfortable temperature and a protection against possible harming impacts. There is nothing imaginable in which the pattern of mediated manipulation would be absent. That is even the case in the example of the ballet dancer. He does not express a brute instance of being. He makes use of the body as means to express in a stereotyped and formal way what he wants to transfer to the watching public. The body as a means is not essentially different than language as a means.

Mediated manipulation is the basic pattern setting man apart. It is the condition of what has referred to as a technical skilled ape. The step which would determine the final character appeared the moment the already mentioned implement acquired a secondary meaning, in origin most probably by accident but experienced as a useful effect eventually intentionally organized. This step allowed transcending the

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<sup>251</sup> For an informative discussion on this period: Lloyd, G.E.R. 1991. *Methods and problems in the Greek science*. Cambridge University Press; Hadot, P. 2004. *La Voile d'Isis: Essai sur l'histoire de l'idée de nature*. Paris: Gallimard and, Clagett, M. 1957. *Greek science in Antiquity*. London: Abelard Shuman.

being bound to the actual and the local, more still it is not allowing but imposing this ability. There is no choice as the condition follows from the development, it is inherent to it. So there is no intention, only a contingent consequence.

It is remarkable that none of the elements mentioned is problematic in kind. There is no need to assume abilities with an ethereal character as in the case of the suggestion of a mind or in a more recent naturalizing approach the possibilities emerging from the brain. The argument of complexity as an insurmountable characteristic has been debunked.

What got focussed fell back on the core or techne in the old Greek meaning allowing to negotiate the whole of the planet, to reach the deepest of the oceans, to linger in the highest realms of the atmosphere even to leave the world behind.<sup>252</sup>

In the end this contribution can be reduced to one single question: if it is indeed the case that man is a species amongst species close akin to the great apes, hence possessing similar cognitive abilities and similar ways of negotiating the environment, how then can the abilities the contemporary man demonstrates have been coming into being in a not problematic way?<sup>253</sup>

The endeavour to find an answer got accompanied by a second project, shedding light on the history of the mind and the cluster of concepts surrounding it. It is essential to surface and expose a series of operations alas more than often veiled by meanings with historical provenance. Removing these meanings will facilitate to lay bare the operations in question. This approach justifies a lengthy introduction discussing assumptions and meanings often taken to be evident.

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<sup>252</sup> On techne: in the 5th century BCE there was no difference made yet between techne and epistetai. The former refers to the skill the latter explains how to perform the execution (Parry, R. 2014. Lemma Episteme and Techne. In the Stanford Encyclopedia of Philosophy. The part on the negotiation is a paraphrase on Bickerton (2014).

<sup>253</sup> On the cognitive abilities: as Darwin in The Descent observes “the difference between man and the higher animals, however large, is one of degree and not in kind.”





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